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THE

VOYAGE OF H.M.S. CHALLENGER.

ZOOLOGY—VOL. XXX.

PLATES.

REPORT

ON THE

SCIENTIFIC RESULTS

OF THE

VOYAGE OF H.M.S. CHALLENGER

DURING THE YEARS 1873-76

UNDER THE COMMAND OF

CAPTAIN GEORGE S. NARES, R.N., F.R.S.

AND THE LATE

CAPTAIN FRANK TOURLE THOMSON, R.N.

PREPARED UNDER THE SUPERINTENDENCE OF

THE LATE

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DIRECTOR OF THE CIVILIAN SCIENTIFIC STAFF ON BOARD

AND NOW OF

JOHN MURRAY, LL.D., PH.D., &c.

ONE OF THE NATURALISTS OF THE EXPEDITION

PRESENTED BY HER MAJESTY'S GOVERNMENT

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ZOOLOGY—VOL. XXX.

PLATES

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REPORT on the ASTEROIDEA collected by H.M.S. CHALLENGER during the years 1873–1876.

By W. PERCY SLADEN, F.L.S., &c.

(*The Manuscript was received in Instalments between* 15*th March* 1886 *and* 21*st January* 1889.)

EDITORIAL NOTE.

THE collection of ASTEROIDEA is one of the most important made during the voyage of the Challenger. The late Sir C. Wyville Thomson paid considerable attention to these organisms, and at one time had the intention of describing the new species discovered during the Expedition; with this end in view, indeed, he had a few of the specimens figured and lithographed.

Eventually, however, the whole collections were handed over to Mr. W. Percy Sladen for examination and description. The result of Mr. Sladen's work, extending over many years, is now presented in this magnificent Report, which forms Part LI. and Volume XXX. of the Zoological series of Reports, the text and plates being bound up in separate parts.

Not only on account of the large number of forms, but also on account of their representative character, the Challenger collection is unquestionably the most important contribution to this group of animals that has ever been made.

In the Report, supplementary to the treatment of the Challenger material, a compact account of the whole group has been aimed at. Thus (1) under each family an account of all the genera included therein, whether Challenger or not, has been given, and where necessary the grounds on which the classification has been adopted are discussed; (2) under each genus there is a statement of all the known species which are recognised as belonging to that genus, with an account of their geographical distribution: this presents a compact idea of the composition and distribution of each genus; (3) a complete list of all the known species of

recent Asteroidea, with their geographical and bathymetrical distribution, and a full account of all synonyms and changes of name are given; every known starfish is believed to be included, and the recognition of "good species" and "synonyms" is based on personal observation (except in the case of some American types and a few recently described from the French dredgings).

The Report may be considered a monograph on the group, though of course it need hardly be said that previously described and recognised species are not re-described. An entirely new classification of the Asteroidea has been given—it was very unsatisfactory and quite unworkable previously.

All naturalists who appreciate careful and accurate work will join with me in congratulating Mr. Sladen on the completion of his valuable memoir, which extends to 935 pages, and is illustrated by 118 lithographic plates and a map.

JOHN MURRAY.

CHALLENGER OFFICE, 32 QUEEN STREET,
EDINBURGH, *January* 23, 1889.

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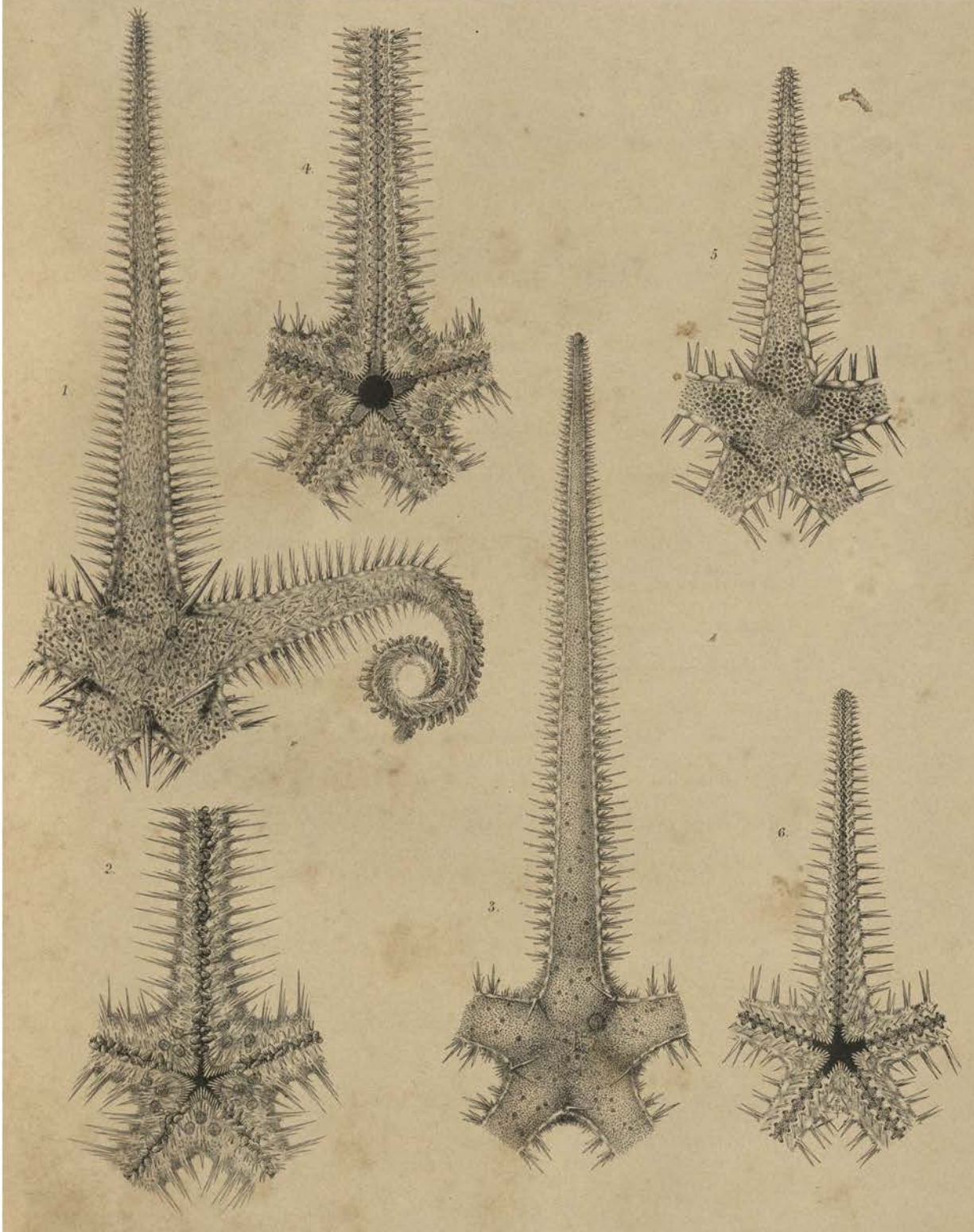
[For magnified details of this species see Pl. IV. figs. 5, 6.]



Crowther del. Mintern Bros. lith.

1–2. PARARCHASTER SPINOSISSIMUS, n. sp. 3–4. PARARCHASTER PEDICIFER, n. sp.
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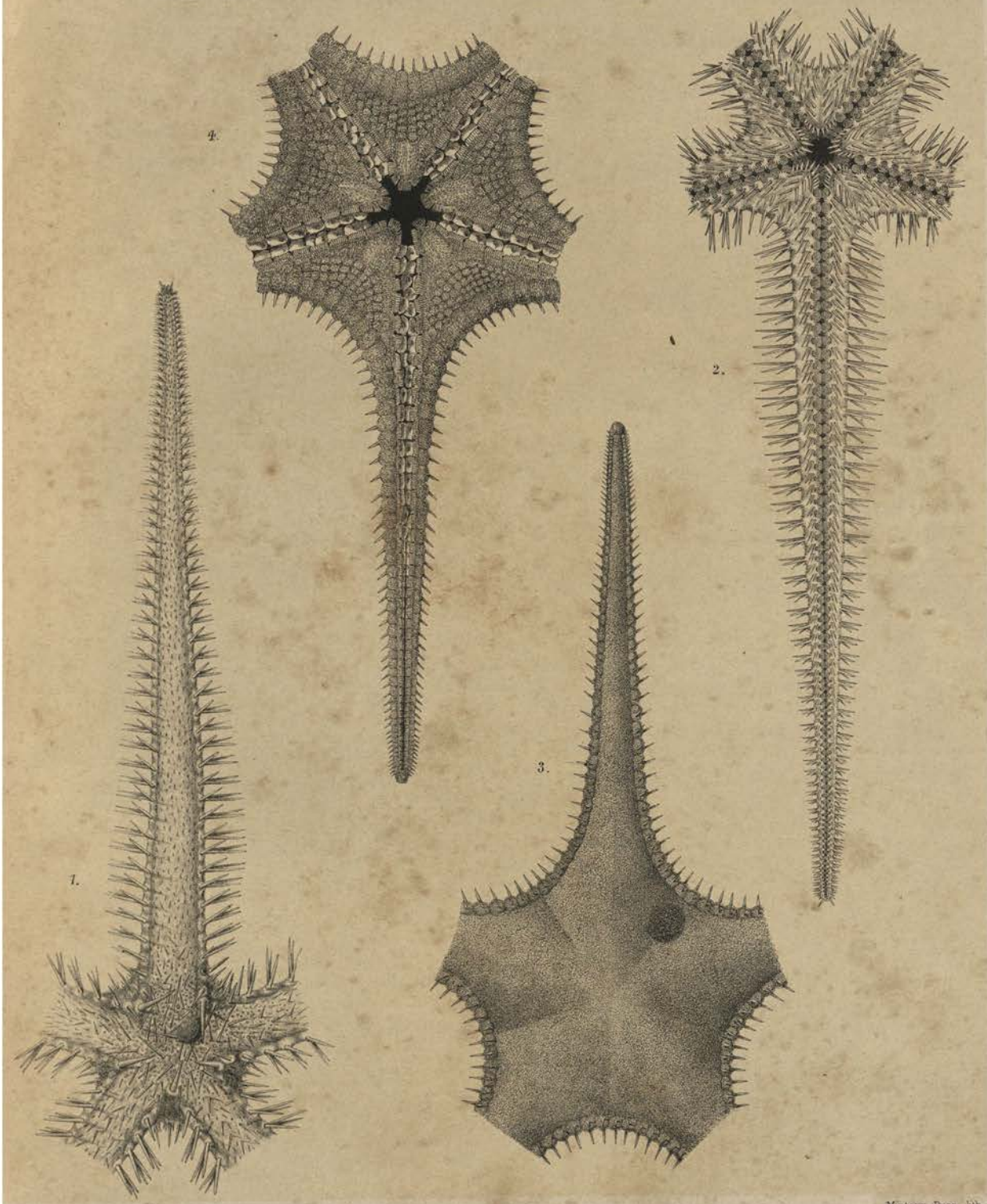

W. H. Crowther del. Mintern Bros. lith.

1–2. PARARCHASTER SEMISQUAMATUS, n. sp. 3–4. DYTASTER EXILIS, n. sp. (var. GRACILIS).

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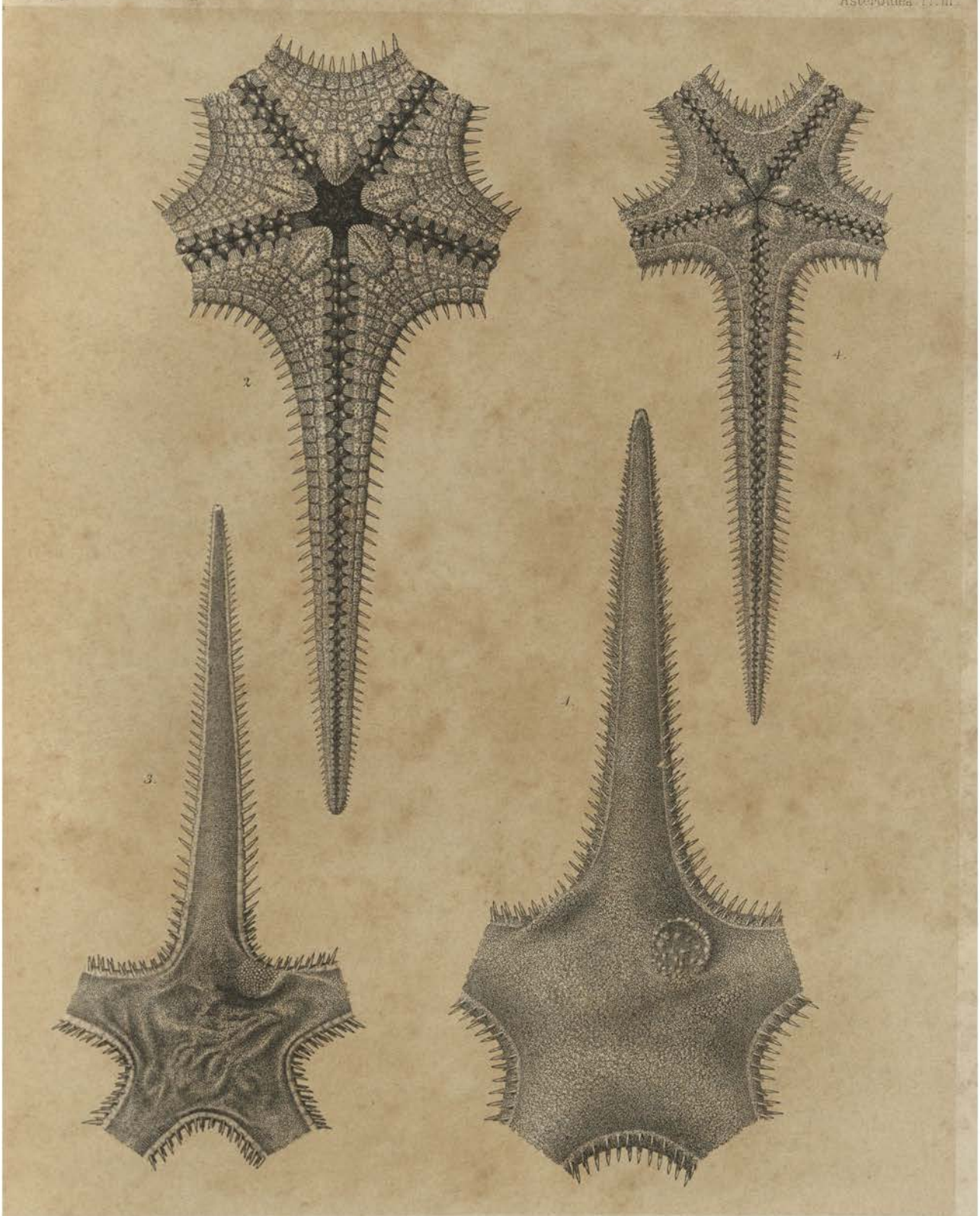
Fig. 3. Abactinal aspect; natural size.

Fig. 4. Actinal aspect; natural size.

[For magnified details of this species see Pl. XXXII. figs. 5, 6.]



H. Crowther, del. Hollick lith.

Hanhart imp.

1-2. DYTASTER NOBILIS, n. sp. 3-4. DYTASTER MADREPORIFER, n. sp.

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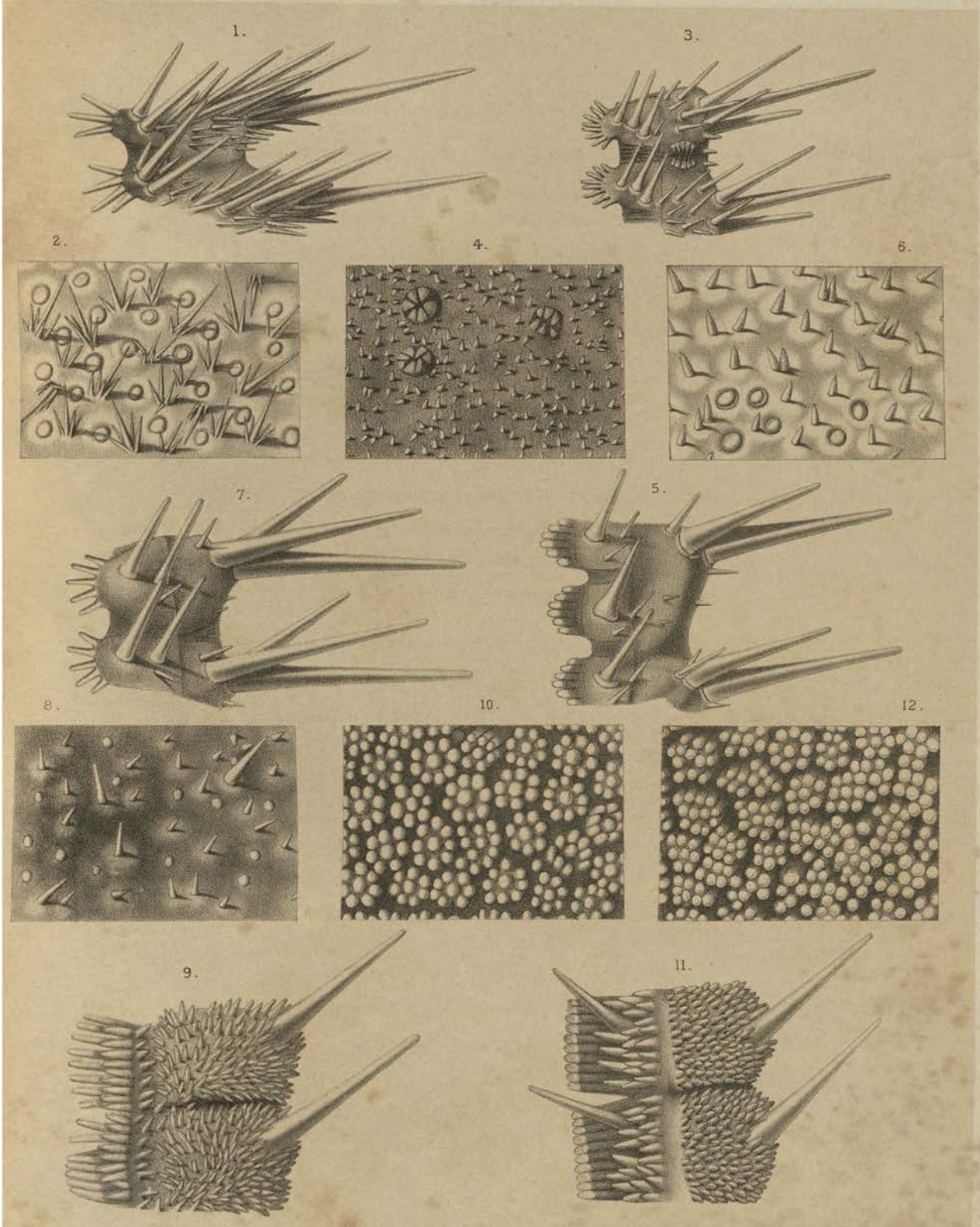

rowther del.

F. Huth Lith^r Edin^r

1-2. PARARCHASTER SPINOSISSIMUS, n. sp. 3-4. PARARCHASTER PEDICIFER, n. sp.
5-6. PARARCHASTER ARMATUS, n. sp. 7-8. PARARCHASTER SEMISQUAMATUS, n. sp.
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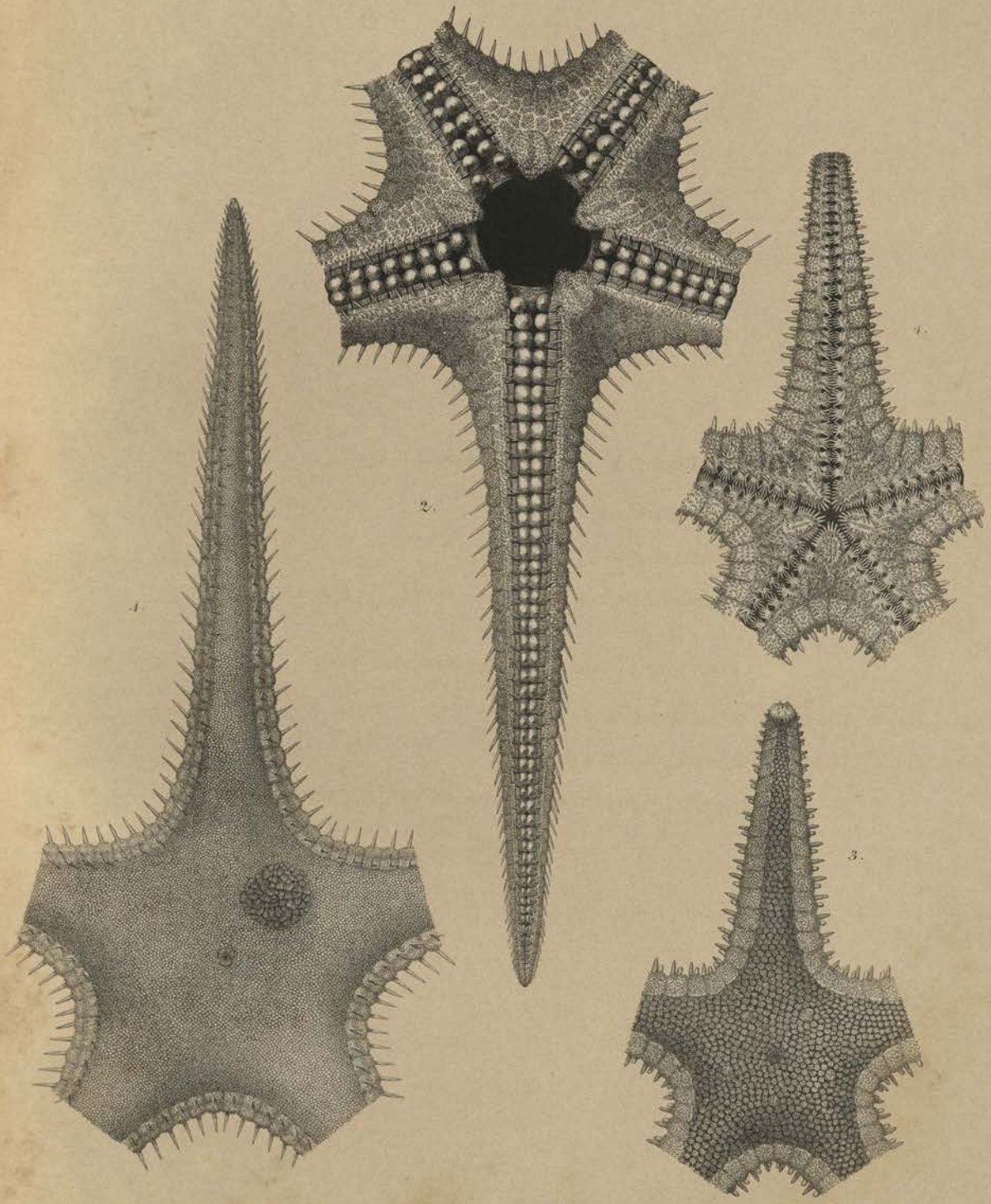

W.H.Crowther, del. Hollick lith. Bonhart imp.

1-2. DYTASTER SPINOSUS, n. sp. 3-4. PONTASTER SUBTUBERCULATUS, n. sp.

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[For magnified details of this species see Pl. VII. figs. 5, 6.]

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Fig. 3. Abactinal aspect; magnified 1½ diameters.

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Fig. 5. Abactinal aspect; magnified 3 diameters.

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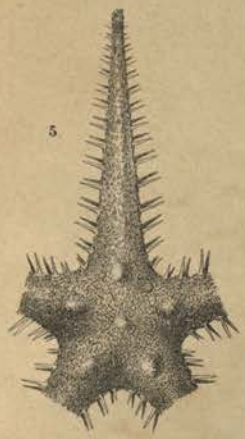
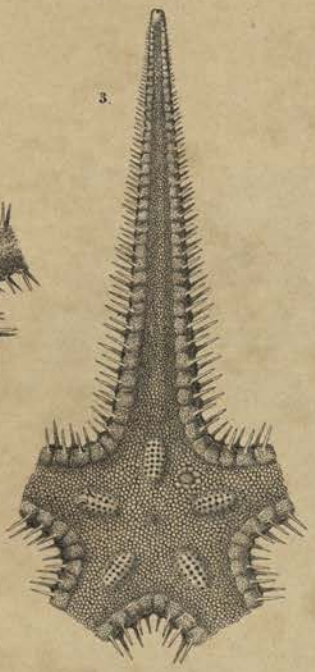
[For magnified details of this species see Pl. VII. figs. 7, 8.]

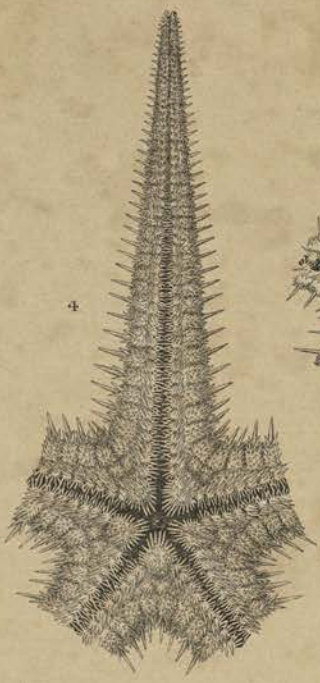
Fig. 7. PONTASTER TENUISPINUS, var. PLATYNOTA, nov. . . 29

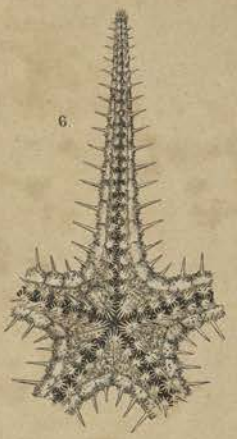
Fig. 7. Abactinal aspect; magnified 1½ diameters.

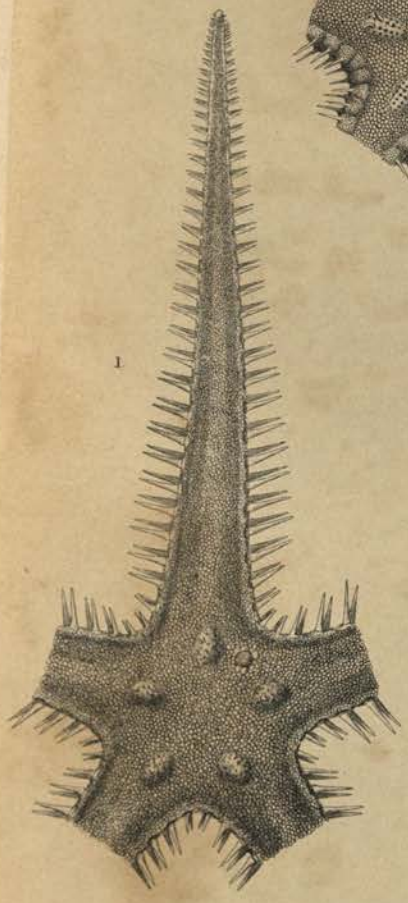
[For magnified details of this variety see Pl. VII. figs. 3, 4.]

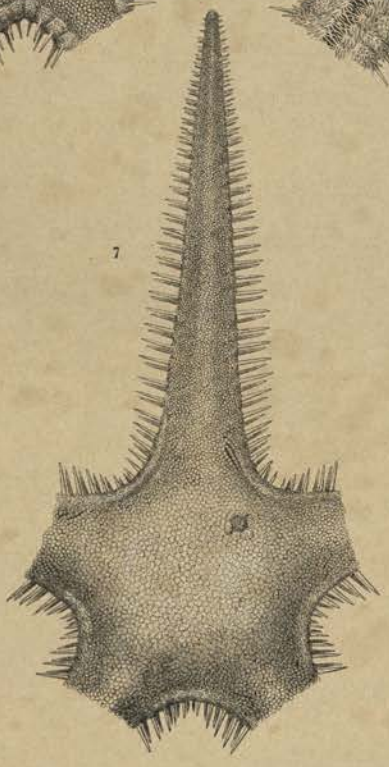


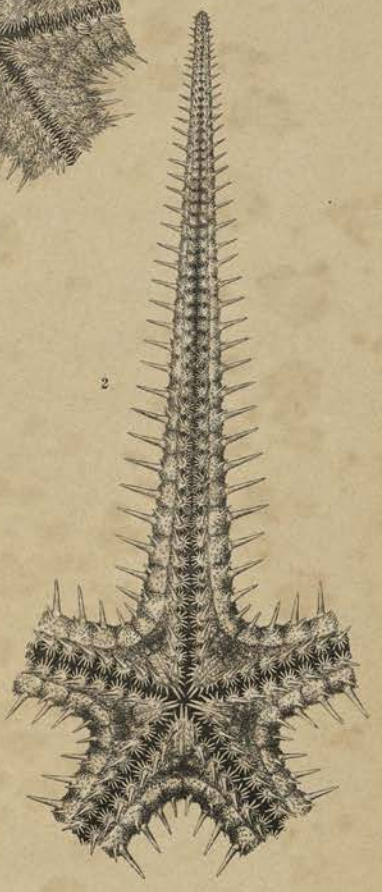












W.H. Crowther del. et lith.

Mintern Bros. imp.

1–2. PONTASTER MIMICUS, n. sp.
3–4. PONTASTER LIMBATUS, n. sp.
5–6. PONTASTER PRISTINUS, n. sp.
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Figs. 1, 2. PONTASTER MIMICUS, n. sp. 48

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. VII. figs. 5, 6.]

Figs. 3, 4. PONTASTER LIMBATUS, n. sp. 35

Fig. 3. Abactinal aspect; magnified 1½ diameters.

Fig. 4. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. VII. figs 1, 2.]

Figs. 5, 6. PONTASTER PRISTINUS, n. sp. . . . 50

Fig. 5. Abactinal aspect; magnified 3 diameters.

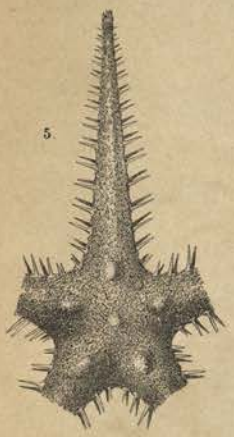
Fig. 6. Actinal aspect; magnified 3 diameters.

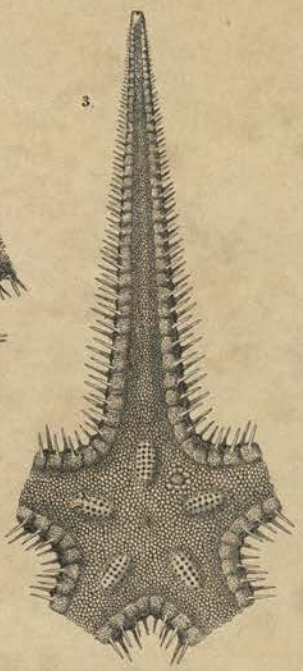
[For magnified details of this species see Pl. VII. figs. 7, 8.]

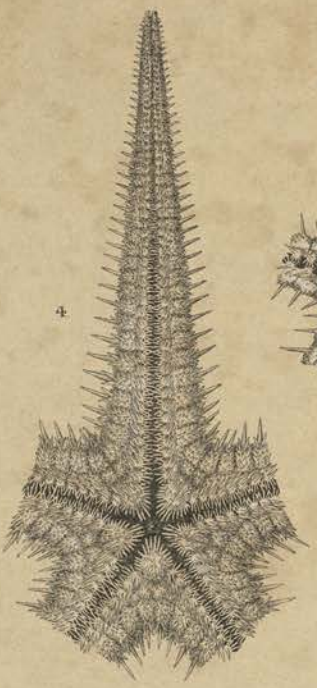
Fig. 7. PONTASTER TENUISPINUS, var. PLATYNOTA, nov. . . 29

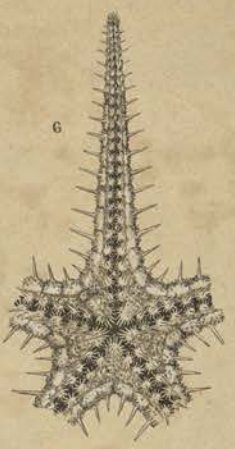
Fig. 7. Abactinal aspect; magnified 1½ diameters.

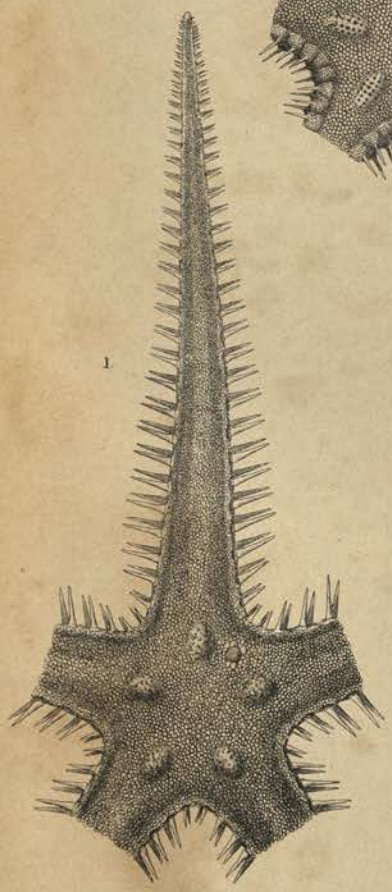
[For magnified details of this variety see Pl. VII. figs. 3, 4.]

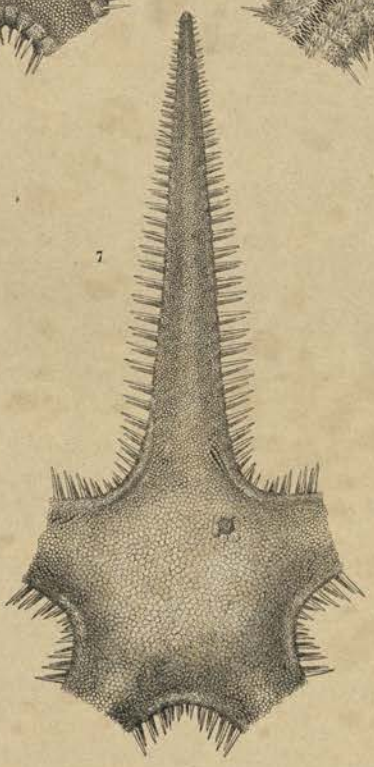


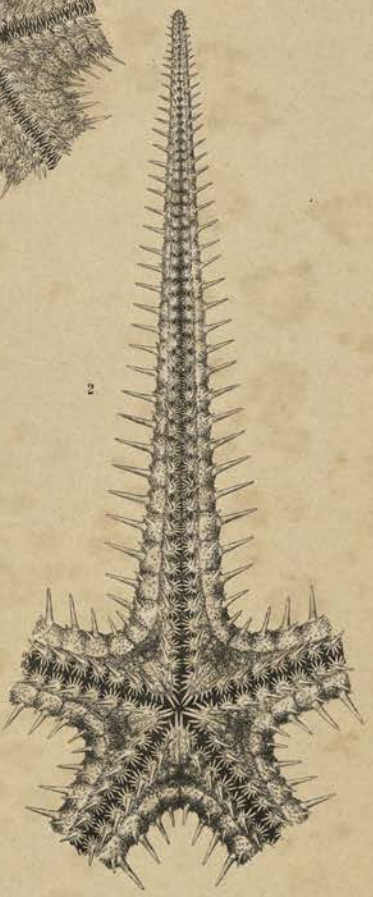












W.H. Crowther del. et lith. Mintern Bros. imp.

1–2. PONTASTER MIMICUS, n. sp. 3–4. PONTASTER LIMBATUS, n. sp.
5–6. PONTASTER PRISTINUS, n. sp. 7. PONTASTER TENUISPINUS, var. PLATYNOTA, nov.

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Figs. 3, 4. PONTASTER TENUISPINUS, var. PLATYNOTA, nov. . 29

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[For a macroscopic figure of this variety see Pl. VI. fig. 7.]

Figs. 5, 6. PONTASTER MIMICUS, n. sp. 48

Fig. 5. A portion of the abactinal surface; magnified 20 diameters.
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Figs. 7, 8. PONTASTER PRISTINUS, n. sp. 50

ig. 7. A portion of the abactinal surface; magnified 30 diameters.
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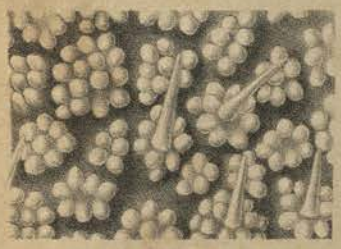
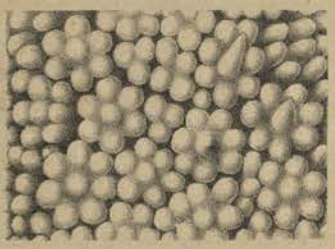
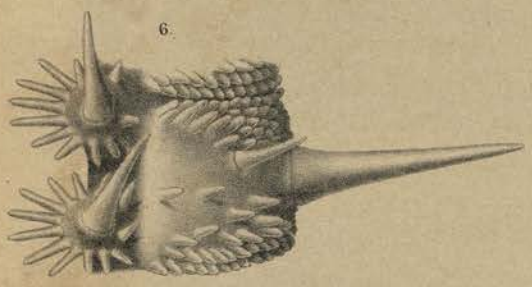
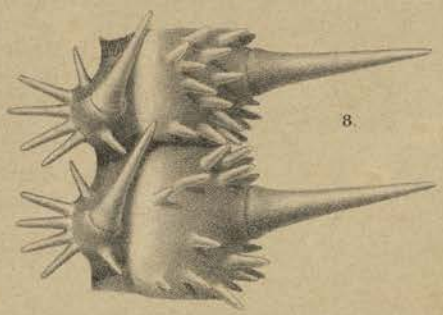
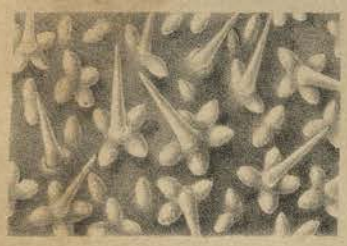
ROYAL ASIATIC SOCIETY

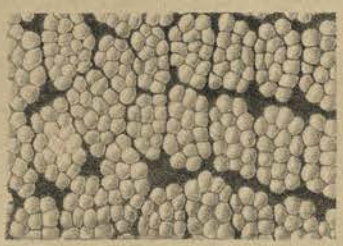


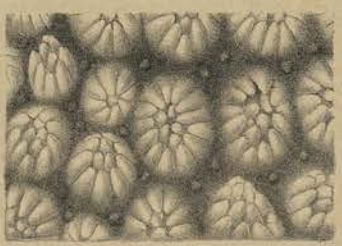


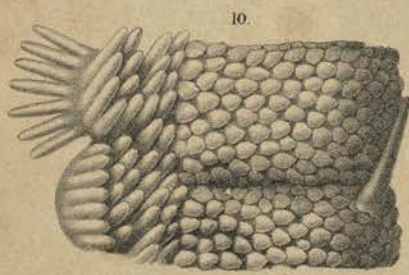


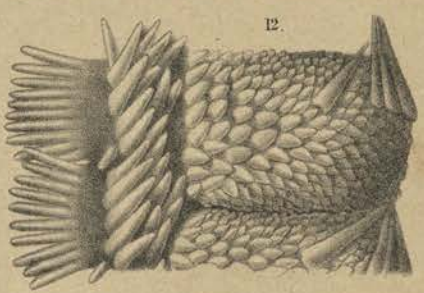












W.H. Crowther del et lith.

Mintern Bros. imp.

1–2. PONTASTER LIMBATUS, n.sp.
3–4 PONTASTER TENUISPINUS, var, PLATYNOTA, nov.
5–6. PONTASTER MIMICUS, n.sp.
7–8 PONTASTER PRISTINUS, n.sp.
9–10. PSILASTER CASSIOPE, n.sp.
11–12 PSILASTER PATAGIATUS, n.sp.

PLATE VIII.

PLATE VIII.

Page

Figs. 1, 2. PONTASTER HEBITUS, n. sp. 33

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XII. figs. 1, 2.]

Figs. 3, 4. PONTASTER FORCIPATUS, n. sp. 43

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

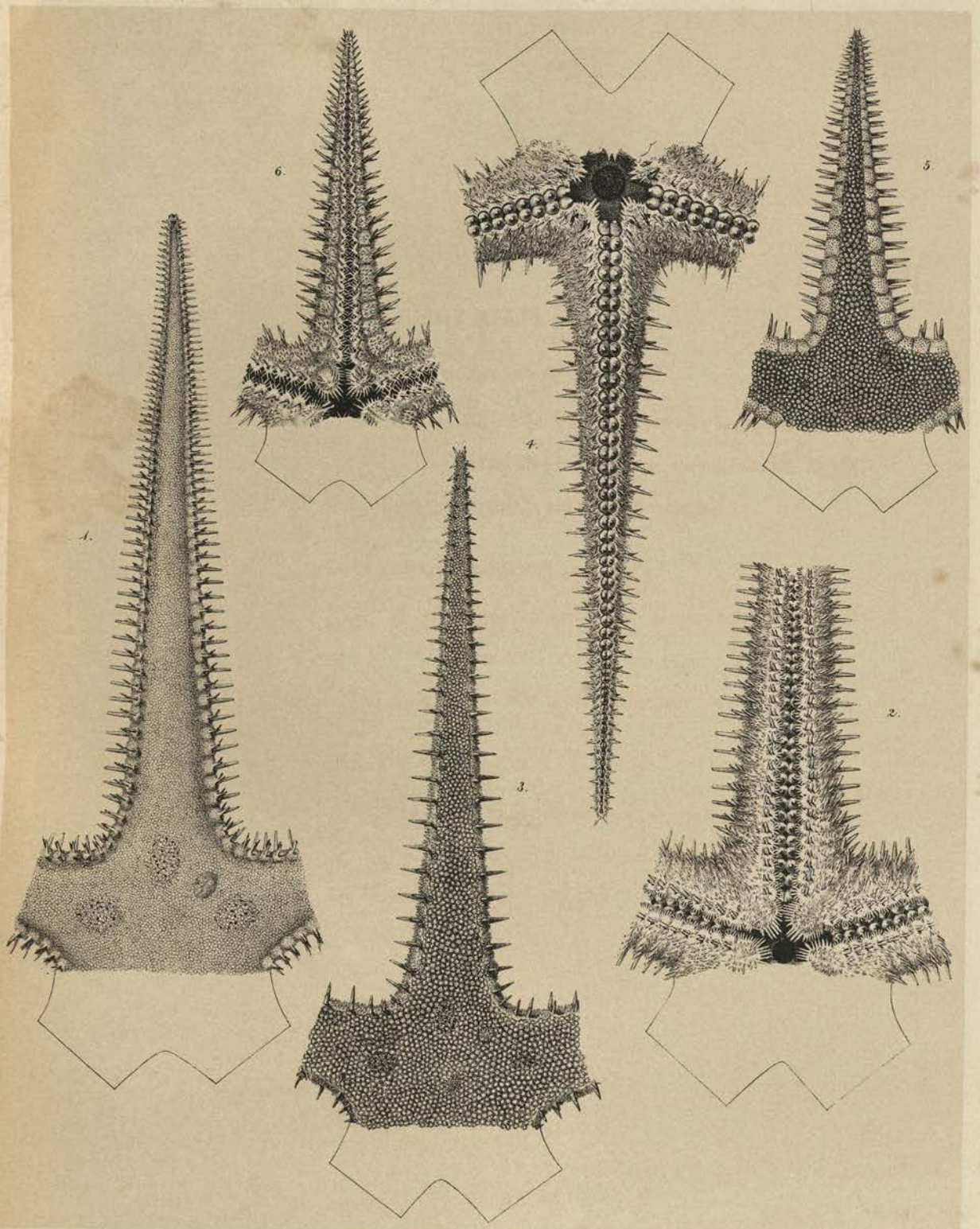
[For magnified details of this species see Pl. XII. figs. 3, 4.]

Figs. 5, 6. PONTASTER VENUSTUS, n. sp. 52

Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XII. figs. 5, 6.]



W.H. Crewdson, del. Hollick lith. Hanhart imp.

1-2. PONTASTER HEBITUS, n. sp. 3-4. PONTASTER FORCIPATUS, n. sp.
5-6. PONTASTER VENUSTUS, n. sp.

PLATE IX.

PLATE IX.

Page

Figs. 1, 2. PONTASTER OXYACANTHUS, n. sp. . . . 38

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XII. figs. 7, 8.]

Figs. 3, 4. PONTASTER TRULLIPES, n. sp. . . . 55

Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

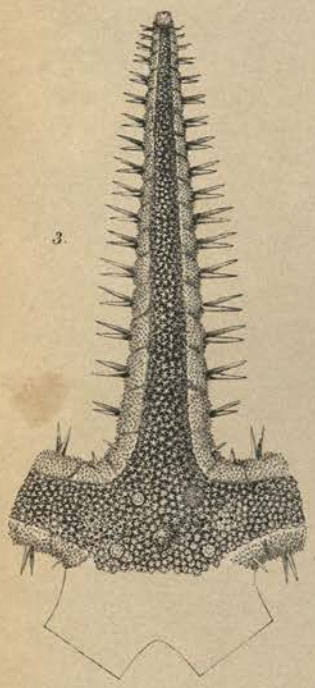
[For magnified details of this species see Pl. XII. figs. 9, 10.]

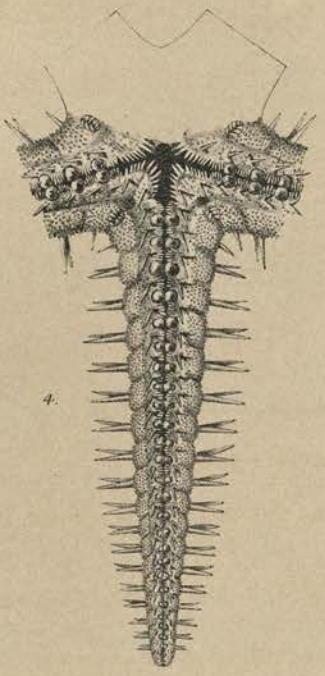
Figs. 5, 6. PONTASTER TERES, n. sp. 41

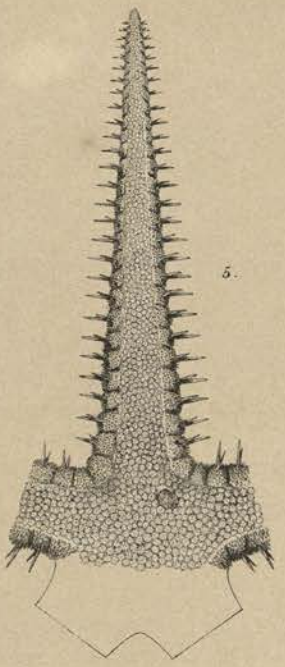
Fig. 5. Abactinal aspect; magnified 2 diameters.

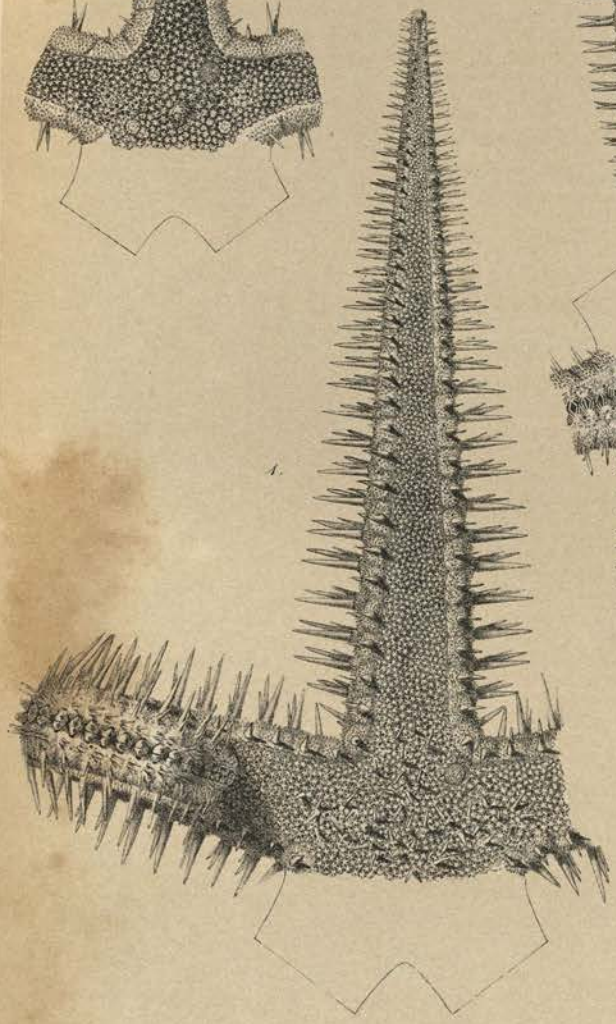
Fig. 6. Actinal aspect; magnified 2 diameters.

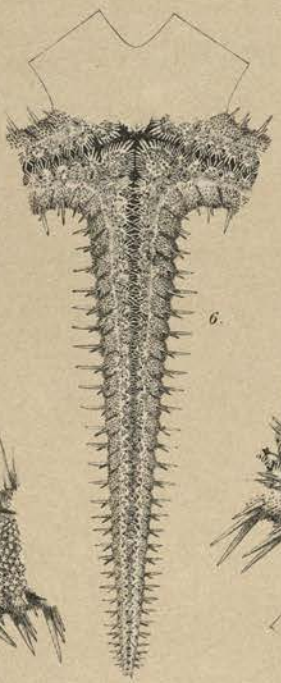
[For magnified details of this species see Pl. XII. figs. 11, 12.]

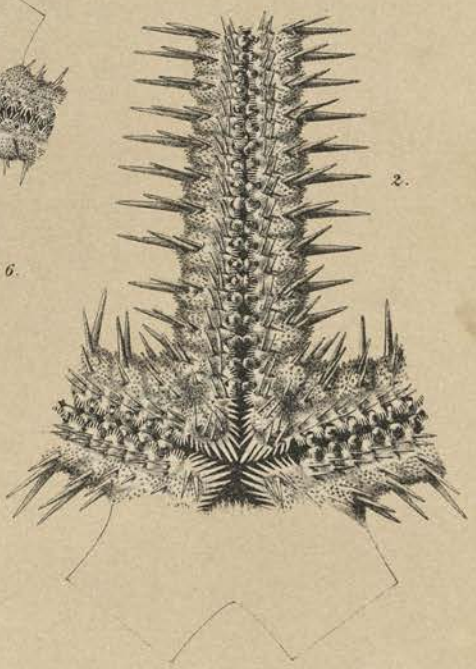












W.H.Crowther, del. Hollick lith. Hanhart imp.

1-3. PONTASTER OXYACANTHUS, n.sp. 3-4. PONTASTER TRULLIPES, n.sp.
5-6. PONTASTER TERES, n.sp.

PLATE X.

PLATE X.

Page

Figs. 1, 2. PONTASTER PLANETA, n. sp. 30

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. XIII. figs. 1, 2.]

Figs. 3, 4. DYTASTER BISERIALIS, n. sp. 77

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XIII. figs. 3, 4.]

Figs. 5, 6. DYTASTER INERMIS, n. sp. 79

Fig. 5. Abactinal aspect; magnified 4 diameters.

Fig. 6. Actinal aspect; magnified 4 diameters.

[For magnified details of this species see Pl. XIII. figs. 5, 6.]

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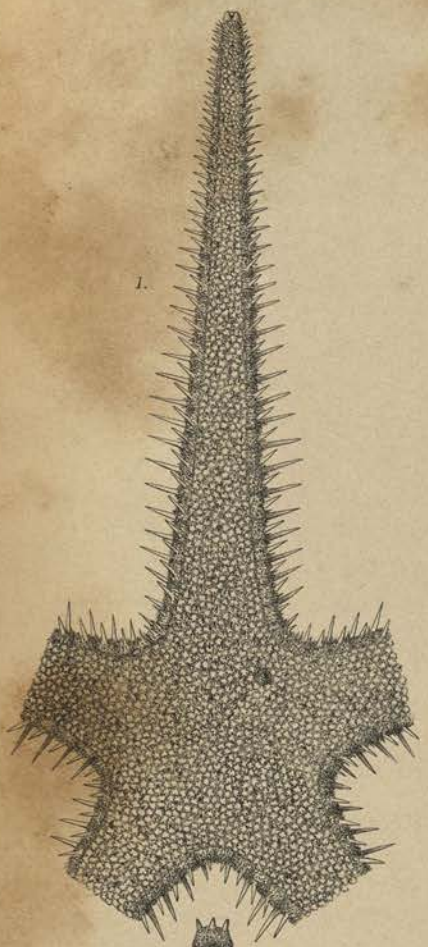

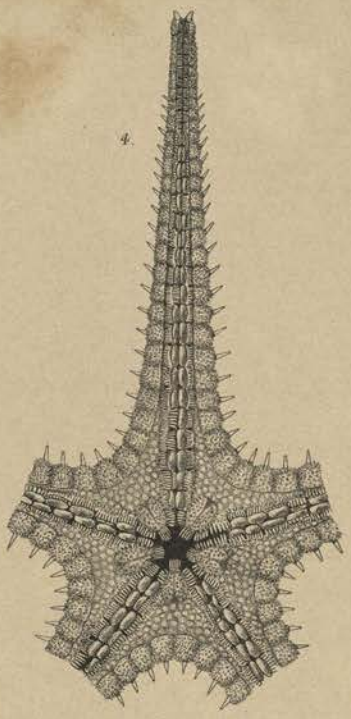

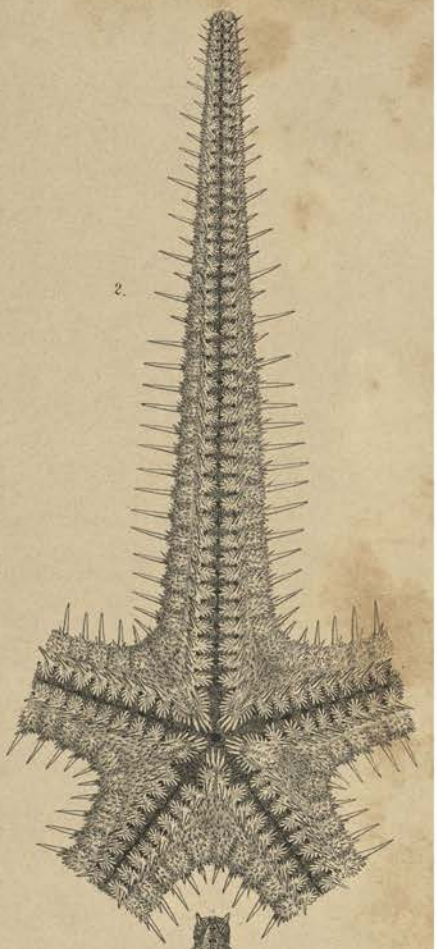

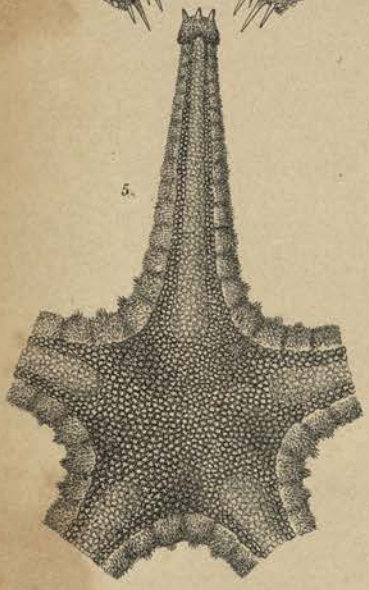

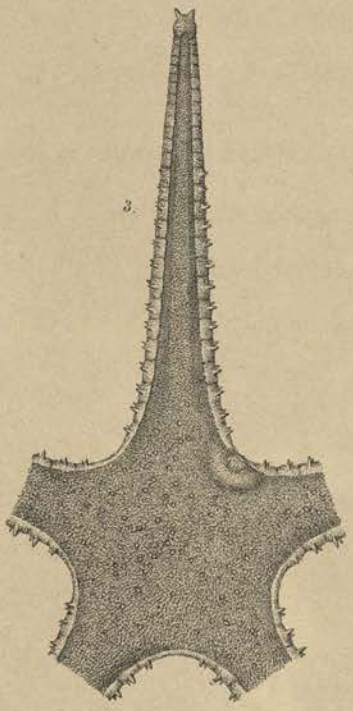

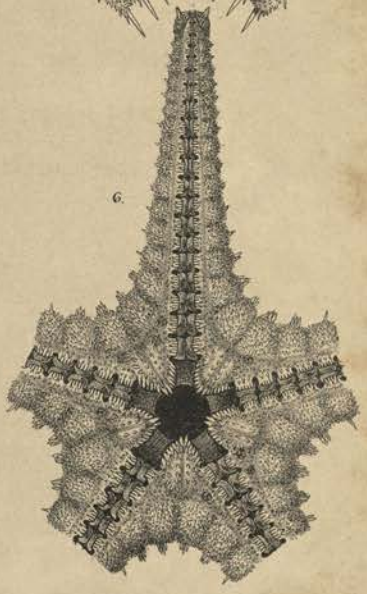

W. H. Crowther del. Mintern Bros. lit.

1-2. PONTASTER PLANETA, n. sp. 3-4. DYTASTER BISERIALIS, n. sp.
5-6. DYTASTER INERMIS, n. sp.

PLATE XI.

PLATE XI.

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Figs. 1–4. PLUTONASTER BIFRONS, Wyville Thomson, sp. 84

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

Fig. 3. A young example, abactinal aspect; magnified 6 diameters.

Fig. 4. A young example, actinal aspect; magnified 6 diameters.

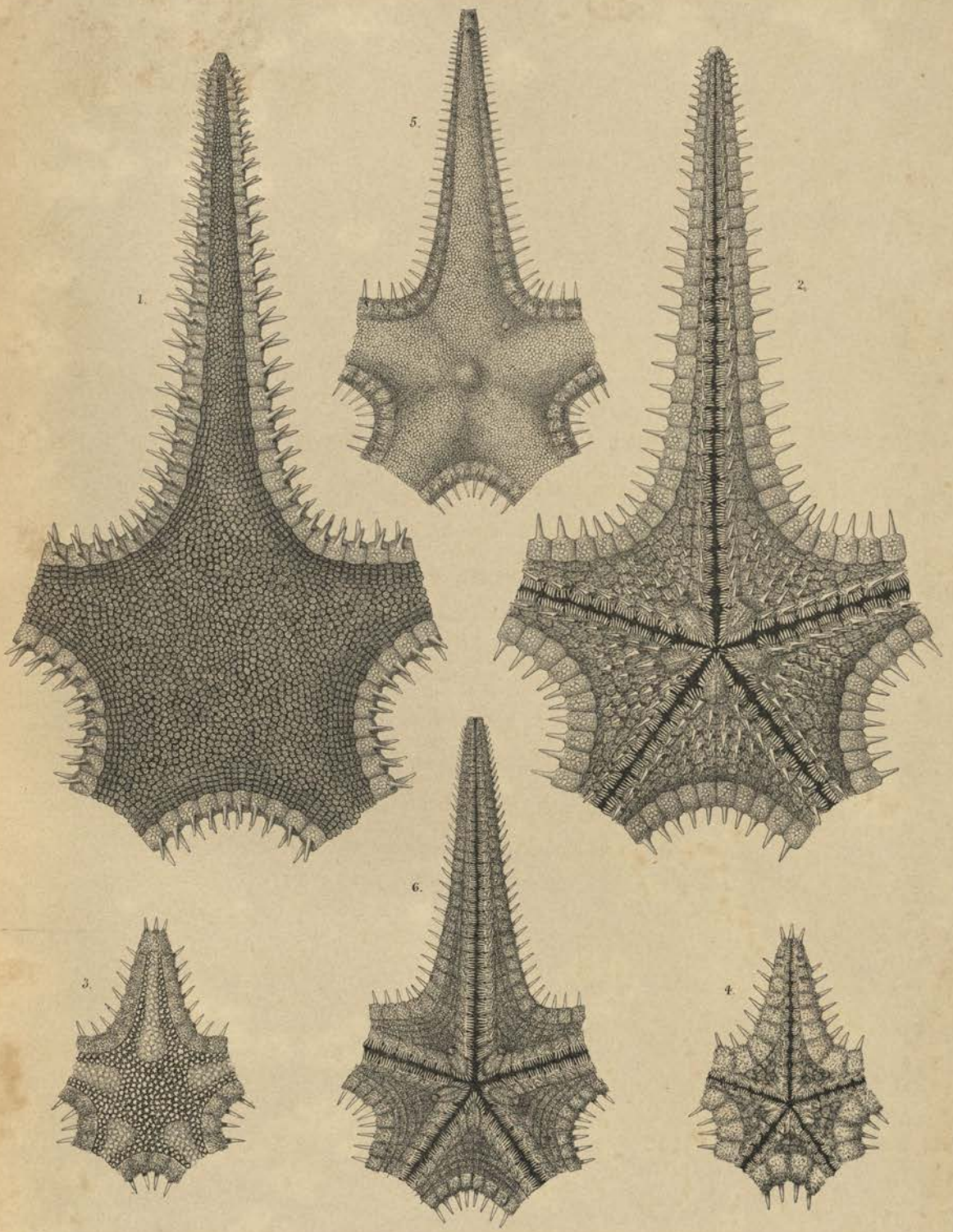
[For magnified details of this species see Pl. XIII. figs. 9, 10.]

Figs. 5, 6. PLUTONASTER AMBIGUUS, n. sp. . . . 95

Fig. 5. Abactinal aspect; magnified 3 diameters.

Fig. 6. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. XIII. figs. 11, 12.]



W. H. Crowther del. Mintern Bros. imp.

1–4. PLUTONASTER BIFRONS, Wyville Thomson, sp. 5–6. PLUTONASTER AMBIGUUS, n. sp.

PLATE XII.

PLATE XII.

Page

Figs. 1, 2. PONTASTER HEBITUS, n. sp. 33

Fig. 1. Adambulacral and infero-marginal plates; magnified 8 diameters.
Fig. 2. A portion of the abactinal surface; magnified 25 diameters.
[For macroscopic figures of this species see Pl. VIII. figs. 1, 2.]

Figs. 3, 4. PONTASTER FORCIPATUS, n. sp. . . . 43

Fig. 3. Adambulacral and infero-marginal plates; magnified 10 diameters.
Fig. 4. A portion of the abactinal surface; magnified 20 diameters.
[For macroscopic figures of this species see Pl. VIII. figs. 3, 4.]

Figs. 5, 6. PONTASTER VENUSTUS, n. sp. . . . 52

Fig. 5. Adambulacral and infero-marginal plates; magnified 12 diameters.
Fig 6. A portion of the abactinal surface; magnified 18 diameters.
[For macroscopic figures of this species see Pl. VIII. figs. 5, 6.]

Figs. 7, 8. PONTASTER OXYACANTHUS, n. sp. . . . 38

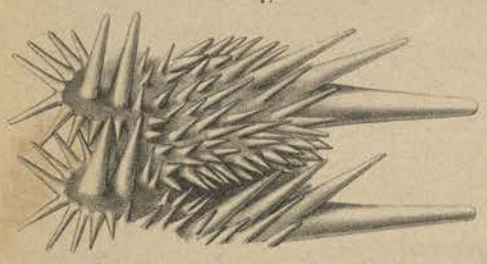
Fig. 7. Adambulacral and infero-marginal plates; magnified 8 diameters.
Fig. 8. A portion of the abactinal surface; magnified 15 diameters.
[For macroscopic figures of this species see Pl. IX. figs. 1, 2.]

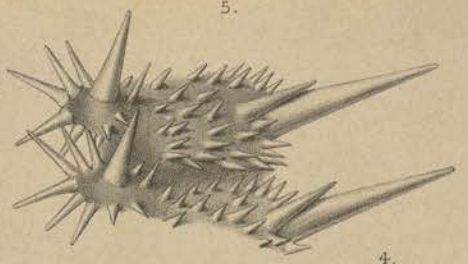
Figs. 9, 10. PONTASTER TRULLIPES, n. sp. . . . 55

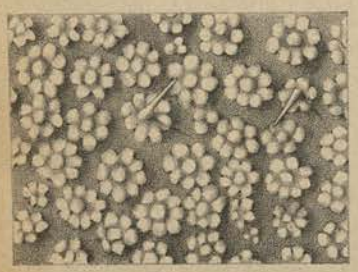
Fig. 9. Adambulacral and infero-marginal plates; magnified 20 diameters.
Fig. 10. A portion of the abactinal surface; magnified 25 diameters.
[For macroscopic figures of this species see Pl. IX. figs. 3, 4.]

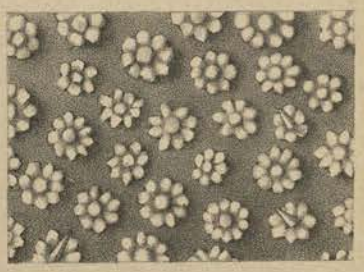
Figs. 11, 12. PONTASTER TERES, n. sp. 41

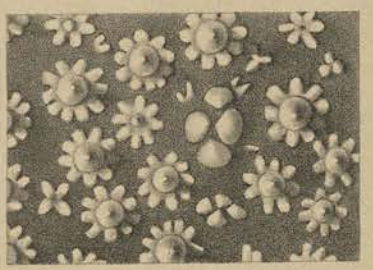
Fig. 11. Adambulacral and infero-marginal plates; magnified 15 diameters.
Fig. 12. A portion of the abactinal surface; magnified 20 diameters.
[For macroscopic figures of this species see Pl. IX. figs. 5, 6.]

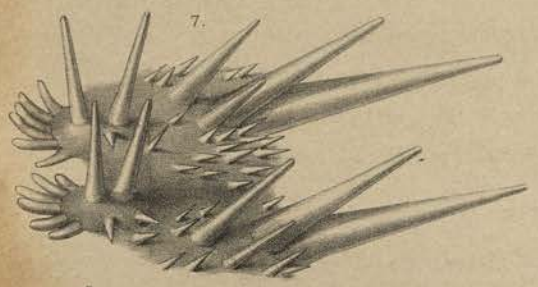


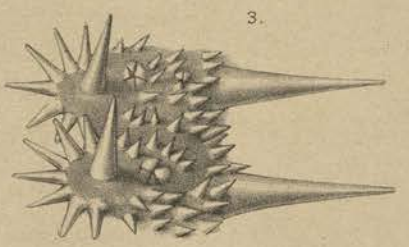


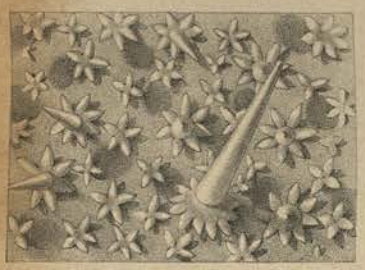


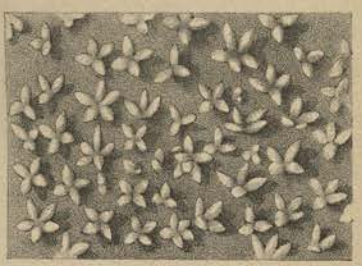


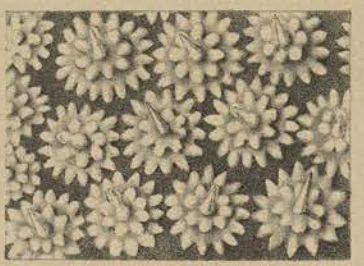


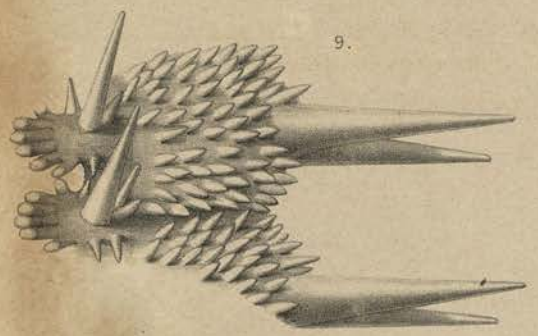


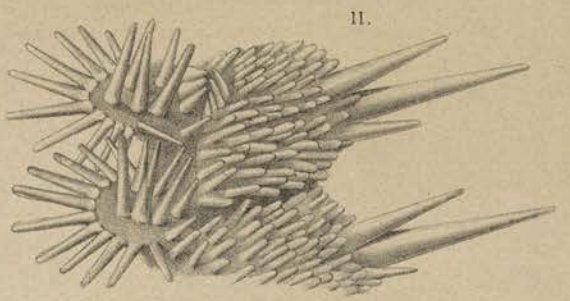












W.H. Crewither del. F. Huth, Lith^r Edin.

1-2. PONTASTER HEBITUS, n. sp. 3-4. PONTASTER FORCIPATUS, n. sp. 5-6. PONTASTER VENUSTUS, n. sp.
7-8. PONTASTER OXYACANTHUS, n. sp. 9-10. PONTASTER TRULLIPES, n. sp. 11-12. PONTASTER TERES, n. sp.

PLATE XIII.

PLATE XIII.

Page

Figs. 1, 2. PONTASTER PLANETA, n. sp. 30

Fig. 1. Adambulacral and infero-marginal plates; magnified 15 diameters.
Fig. 2. A portion of the abactinal surface; magnified 40 diameters.

[For macroscopic figures of this species see Pl. X. figs. 1, 2.]

Figs. 3, 4. DYTASTER BISERIALIS, n. sp. 77

Fig. 3. Adambulacral and infero-marginal plates; magnified 12 diameters.
Fig. 4. A portion of the abactinal surface; magnified 30 diameters.

[For macroscopic figures of this species see Pl. X. figs. 3, 4.]

Figs. 5, 6. DYTASTER INERMIS, n. sp. 79

Fig. 5. Adambulacral and infero-marginal plates; magnified 30 diameters.
Fig. 6. A portion of the abactinal surface; magnified 50 diameters.

[For macroscopic figures of this species see Pl. X. figs. 5, 6.]

Figs. 7, 8. PONTASTER SUBTUBERCULATUS, n. sp. . . . 58

Fig. 7. Adambulacral and infero-marginal plates; magnified 20 diameters.
Fig. 8. A portion of the abactinal surface; magnified 35 diameters.

[For macroscopic figures of this species see Pl. V. figs. 3, 4.]

Figs. 9, 10. PLUTONASTER BIFRONS, Wyville Thomson, sp. . . 84

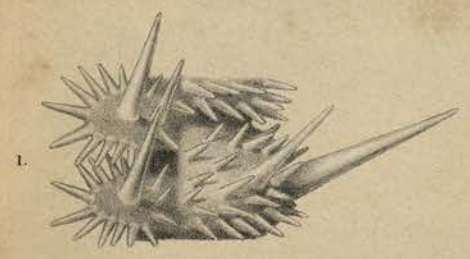
Fig. 9. Adambulacral and infero-marginal plates; magnified 10 diameters.
Fig. 10. A portion of the abactinal surface; magnified 30 diameters.

[For macroscopic figures of this species see Pl. XI. figs. 1–4.]

Figs. 11, 12. PLUTONASTER AMBIGUUS, n. sp. . . . 95

Fig. 11. Adambulacral and infero-marginal plates; magnified 20 diameters.
Fig. 12. A portion of the abactinal surface; magnified 35 diameters.

[For macroscopic figures of this species see Pl. XI. figs. 5, 6.]



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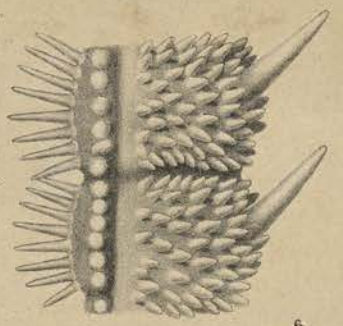

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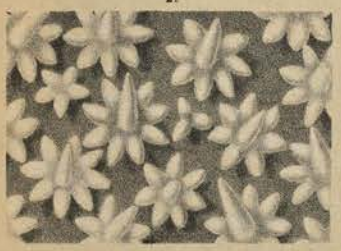

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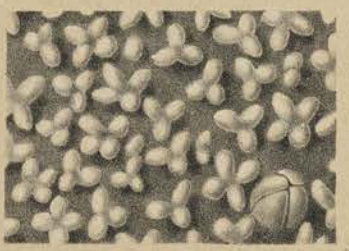

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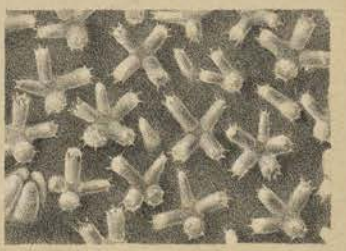

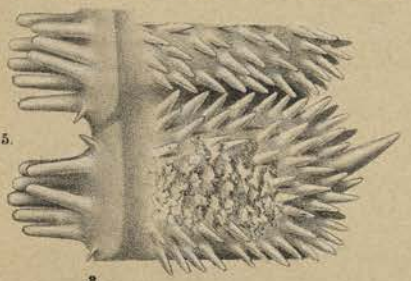

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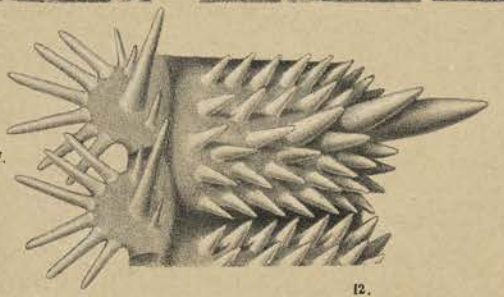

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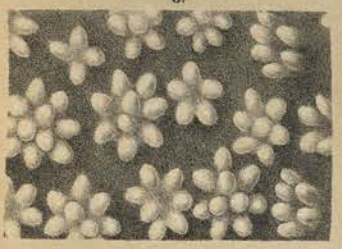

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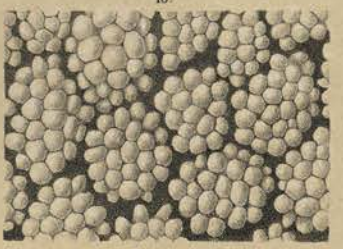
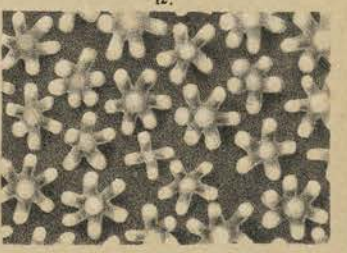
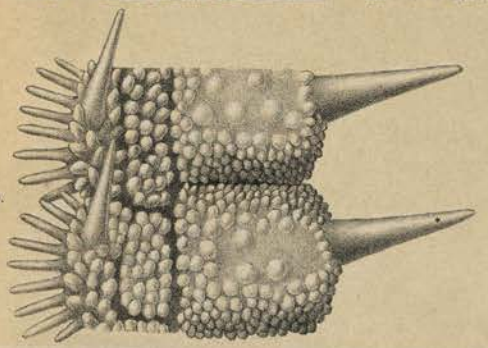


12.





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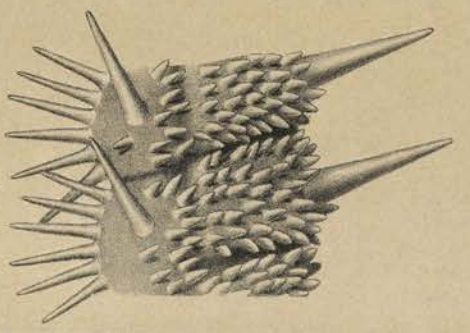


11.

W. H. Crowther del. et lith.

Mintern Bros. imp.

1–2. PONTASTER PLANETA, n. sp.
3–4. DYTASTER BISERIALIS, n. sp.
5–6. DYTASTER INERMIS, n. sp.
7–8. PONTASTER SUBTUBERCULATUS, n. sp.
9–10. PLUTONASTER BIFRONS, Wyville Thomson, sp.
11–12. PLUTONASTER AMBIGUUS, n. sp.

PLATE XIV.

PLATE XIV.

Page

Figs. 1, 2. PLUTONASTER MARGINATUS, n. sp. . . . 88

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XV. figs. 1, 2.]

Figs. 3, 4. PLUTONASTER RIGIDUS, n. sp. 91

Fig. 3. Abactinal aspect; natural size.

Fig. 4. Actinal aspect; natural size.

[For magnified details of this species see Pl. XV. figs. 3, 4.]

Fig. 5. PLUTONASTER RIGIDUS, var. SEMIARMATA, nov. . . 94

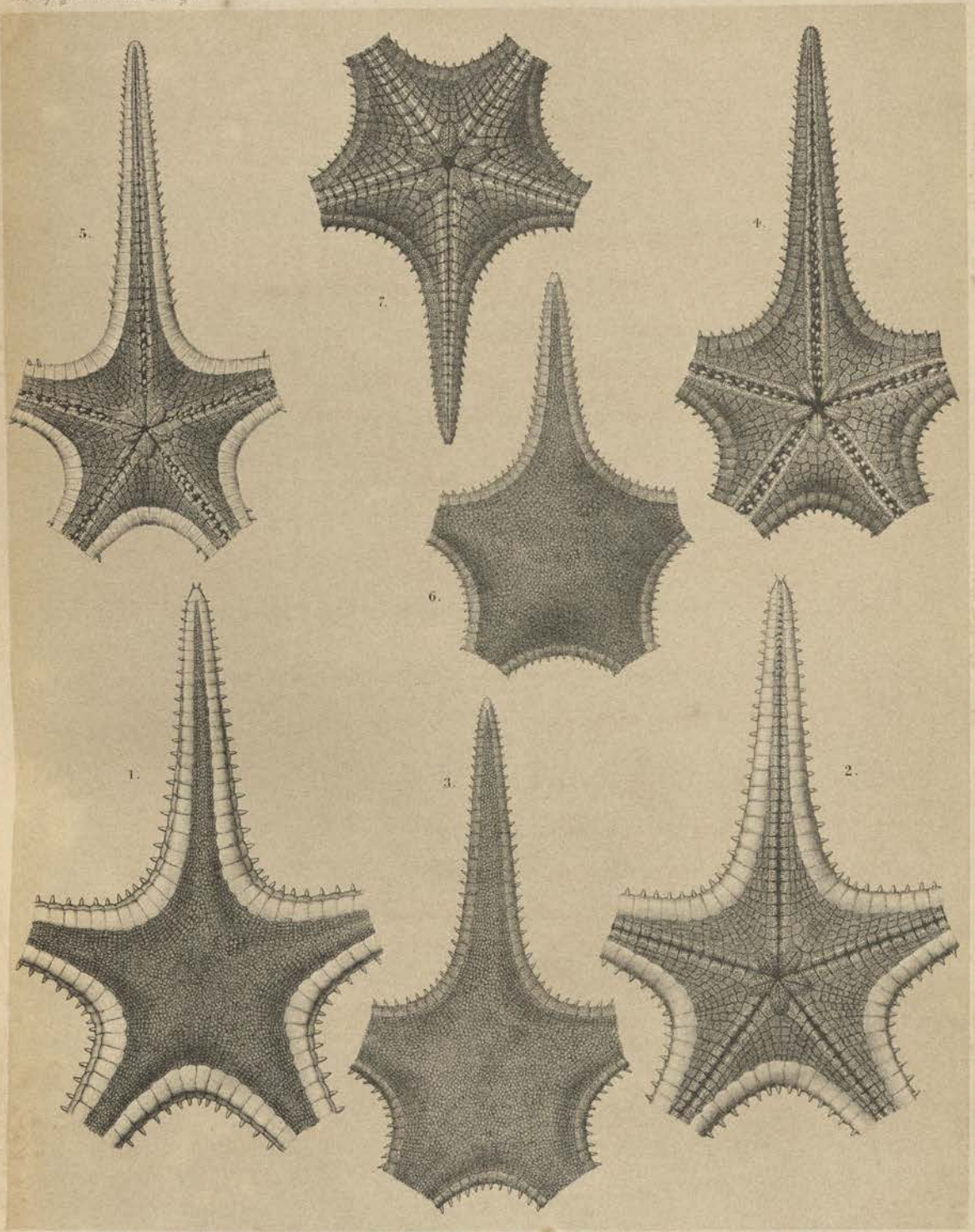
Fig. 5. Actinal aspect; natural size.

Figs. 6, 7. PLUTONASTER NOTATUS, n. sp. 97

Fig. 6. Abactinal aspect; magnified 2 diameters.

Fig. 7. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XV. figs. 5, 6.]



F.H. Michael, del. Bellick lith. Hanhart imp.

1-2. PLUTONASTER MARGINATUS, n.sp.
5. PLUTONASTER RIGIDUS, var. SEMIARMATA, nov.
3-4. PLUTONASTER RIGIDUS, n.sp.
6-7. PLUTONASTER NOTATUS, n.sp.

PLATE XV.

PLATE XV.

Page

Figs. 1, 2. PLUTONASTER MARGINATUS, n. sp. 88

Fig. 1. A portion of the abactinal surface; magnified 30 diameters.

Fig. 2. Adambulacral and infero-marginal plates; magnified 9 diameters.

[For macroscopic figures of this species see Pl. XIV. figs. 1, 2.]

Figs. 3, 4. PLUTONASTER RIGIDUS, n. sp. 91

Fig. 3. A portion of the abactinal surface; magnified 18 diameters.

Fig. 4. Adambulacral and infero-marginal plates; magnified 8 diameters.

[For macroscopic figures of this species see Pl. XIV. figs. 3, 4.]

Figs. 5, 6. PLUTONASTER NOTATUS, n. sp. 97

Fig. 5. A portion of the abactinal surface; magnified 25 diameters.

Fig. 6. Adambulacral and infero-marginal plates; magnified 16 diameters.

[For macroscopic figures of this species see Pl. XIV. figs. 6, 7.]

Figs. 7–11. PHOXASTER PUMILUS, n. sp. . . . 236

Fig. 7. A portion of the abactinal surface of a young example; magnified 30 diameters.

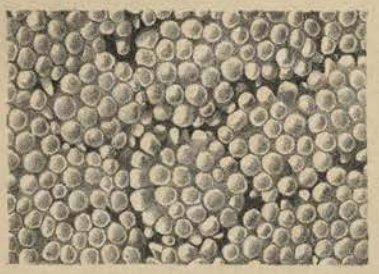
Fig. 8. Adambulacral and infero-marginal plates of a young example; magnified 25 diameters.

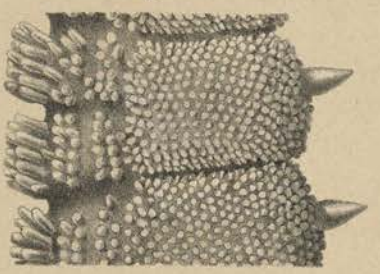
Fig. 9. A portion of the abactinal surface of an adult example; magnified 25 diameters.

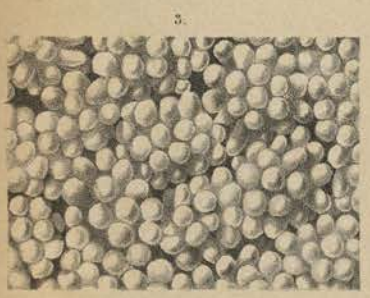
Fig. 10. Adambulacral and infero-marginal plates of an adult example; magnified 20 diameters.

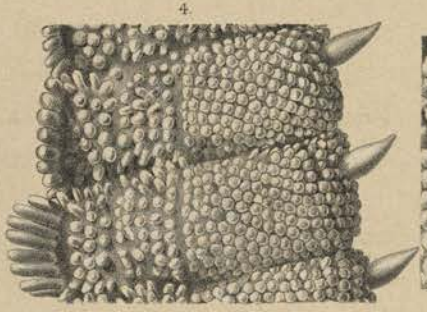
Fig. 11. Mouth-plates and armature; magnified 12 diameters.

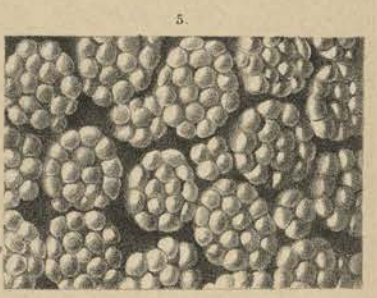
[For macroscopic figures of this species see Pl. XL. figs. 3–6.]

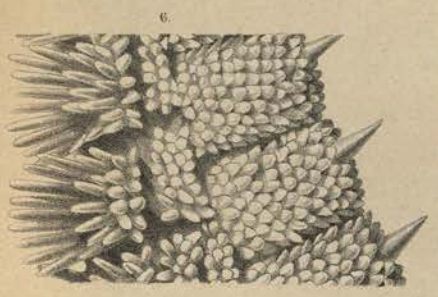


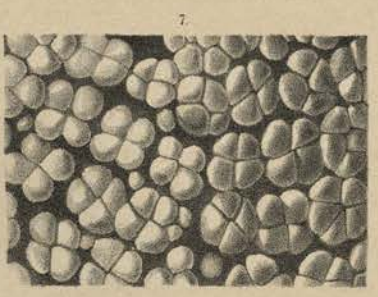


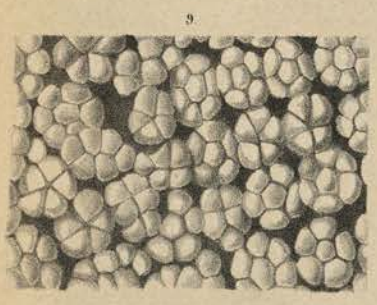












F.H. Michael del. et lith. Mintern Bros. imp.

1–2. PLUTONASTER MARGINATUS, n. sp. 3–4. PLUTONASTER RIGIDUS, n. sp.
5–6. PLUTONASTER NOTATUS, n. sp. 7–11. PHOXASTER PUMILUS, n. sp.

PLATE XVI.

PLATE XVI.

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Figs. 1–5. LONCHOTASTER TARTAREUS, n. sp. . . . 104

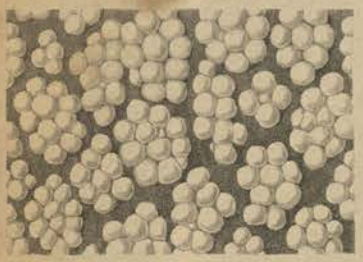
Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 3. Profile view; magnified 2 diameters.

Fig. 4. A portion of the abactinal surface; magnified 20 diameters.

Fig. 5. Adambulacral and infero-marginal plates; magnified 10 diameters.



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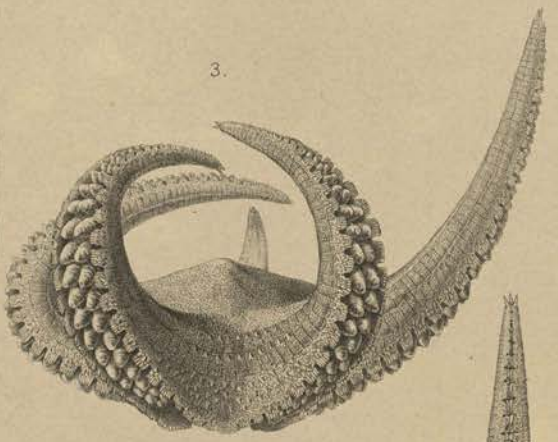

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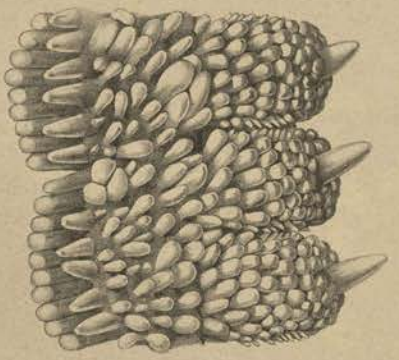

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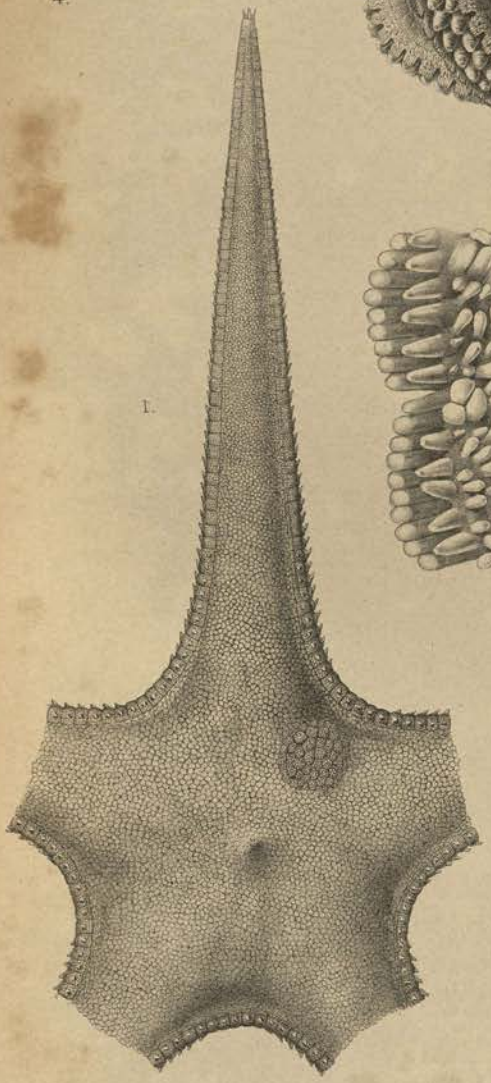

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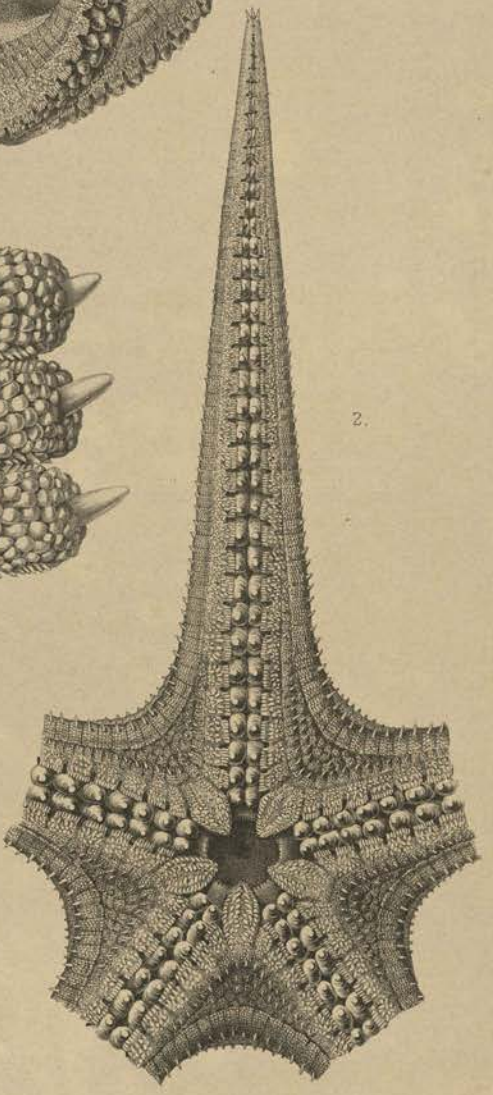

2.

W. H. Crowther del. F. Huth, Lith^r Edin^r

LONCHOTASTER TARTAREUS, n. sp.

PLATE XVII.

PLATE XVII.

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Figs. 1, 2. APHRODITASTER GRACILIS, n. sp. . . . 117

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XVIII. figs. 7, 8.]

Figs. 3, 4. PSEUDARCHASTER TESSELLATUS, n. sp. . . . 112

Fig. 3. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 4. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

[For magnified details of this species see Pl. XVIII. figs. 9–10.]

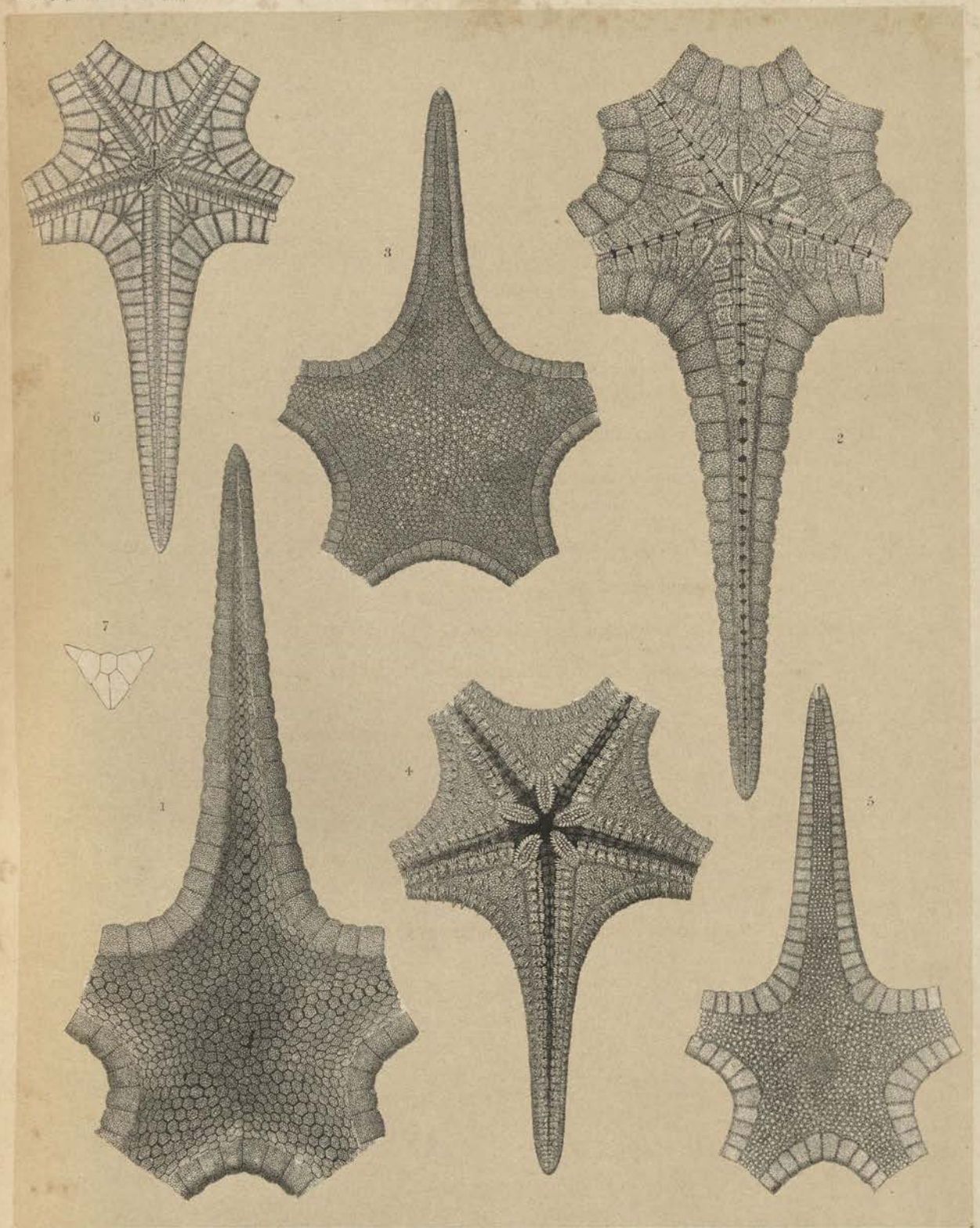
Figs. 5–7. CRASPIDASTER HESPERUS, Müller and Troschel, sp. . . 177

Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

Fig. 7. Diagram of the actinal intermediate plates of an example from Hong Kong; magnified 2 diameters.

[For magnified details of this species see Pl. XVIII. figs. 1–4.]



W.H. Crowther, del. Hollick, lith. Hanhart, imp.

1-2. APHRODITASTER GRACILIS, n. sp. 3-4. PSEUDARCHASTER TESSELLATUS, n. sp.
5-7. CRASPIDASTER HESPERUS, Müller & Troschel, sp.

PLATE XVIII.

PLATE XVIII.

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Figs. 1–4. CRASPIDASTER HESPERUS, Müller and Troschel, sp. . . 177

Fig. 1. A portion of the abactinal surface of an example from the Philippine Islands; magnified 20 diameters.

Fig. 2. Adambulacral and infero-marginal plates of the same; magnified 15 diameters.

Fig. 3. A portion of the abactinal surface of an example from Hong Kong; magnified 18 diameters.

Fig. 4. Adambulacral and infero-marginal plates of the same; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XVII. figs. 5–7.]

Figs. 5, 6. PENTAGONASTER ARCUATUS, n. sp. . . . 277

Fig. 5. A portion of the abactinal surface; magnified 8 diameters.

Fig. 6. Adambulacral and adjacent intermediate plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. LII. figs. 1, 2.]

Figs. 7, 8. APHRODITASTER GRACILIS, n. sp. . . . 117

Fig. 7. A portion of the abactinal surface, showing the plates of the median radial line; magnified 12 diameters.

Fig. 8. Adambulacral and infero-marginal plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XVII. figs. 1, 2.]

Figs. 9, 10. PSEUDARCHASTER TESSELLATUS, n. sp. . . . 112

Fig. 9. A portion of the abactinal surface; magnified 12 diameters.

Fig. 10. Adambulacral and infero-marginal plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XVII. figs. 3, 4.]

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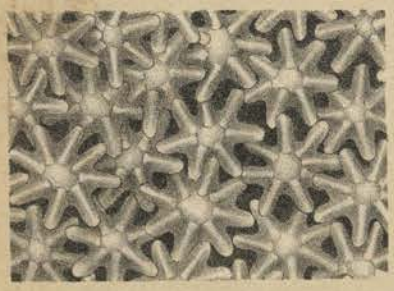

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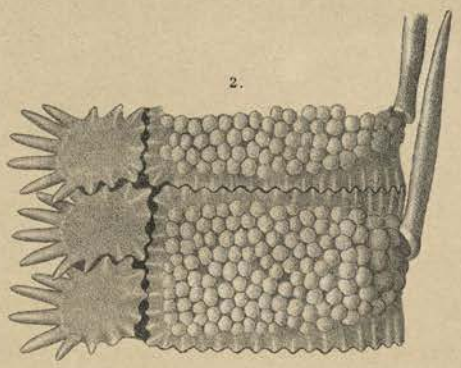

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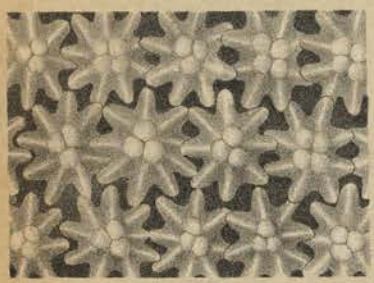

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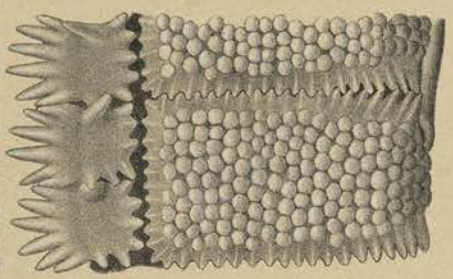

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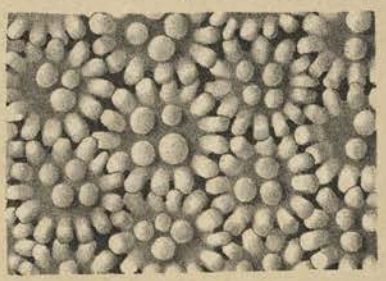

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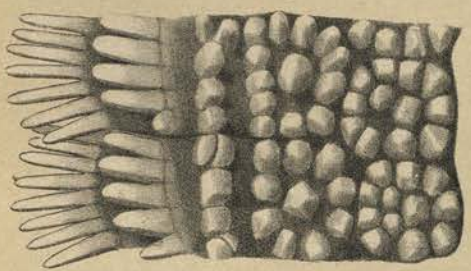

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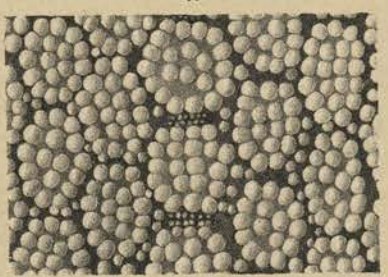

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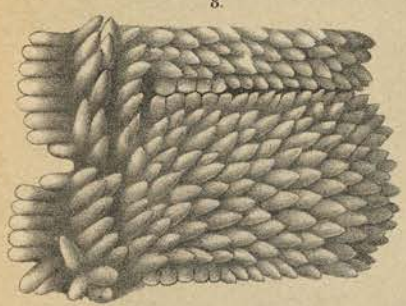

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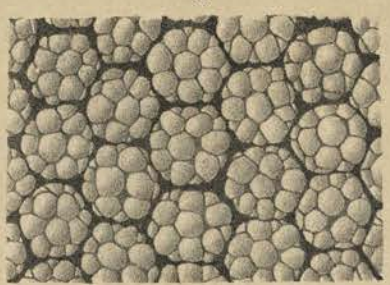

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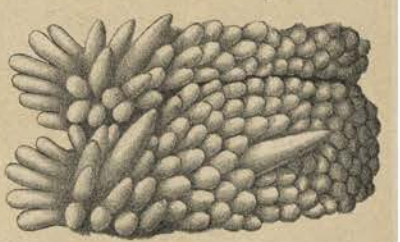


W.H. Crowther del. et lith. Mintern Bros., imp.

1–4. CRASPIDASTER HESPERUS, Müller & Troschel, sp. 5–6. PENTAGONASTER ARCUATUS, n. sp.
7–8. APHRODITASTER GRACILIS, n. sp. 9–10. PSEUDARCHASTER TESSELLATUS, n. sp.

PLATE VIII.

PLATE XIX.

PLATE XIX.

Page

Figs. 1, 2. PSEUDARCHASTER DISCUS, n. sp. . . . 110

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XLII. figs. 3, 4.]

Figs. 3, 4. PSEUDARCHASTER INTERMEDIUS, n. sp. . . . 115

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

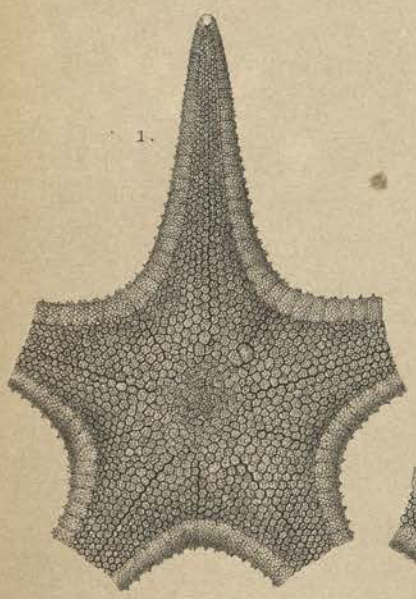
[For magnified details of this species see Pl. XLII. figs. 5, 6.]

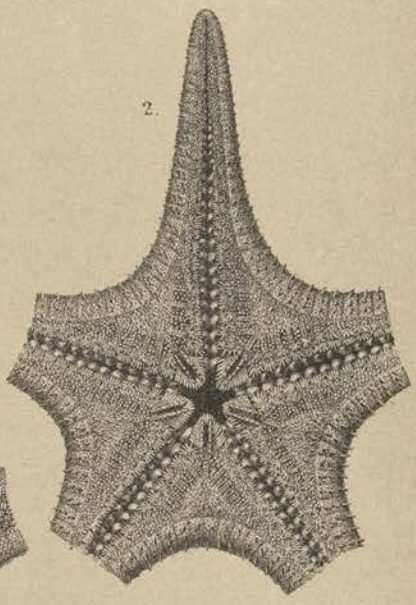
Figs. 5, 6. GNATHASTER ELONGATUS, n. sp. . . . 288

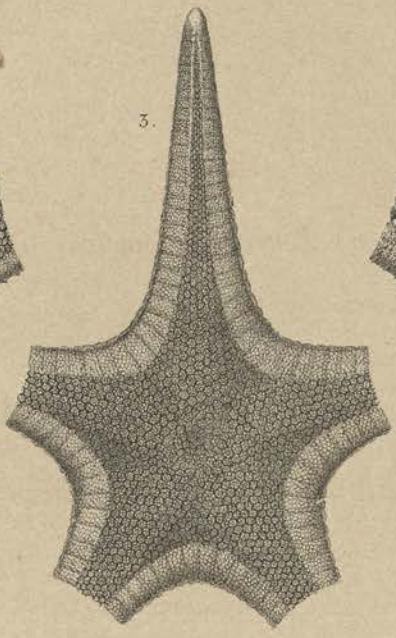
Fig. 5. Abactinal aspect of a young example; magnified 3 diameters.

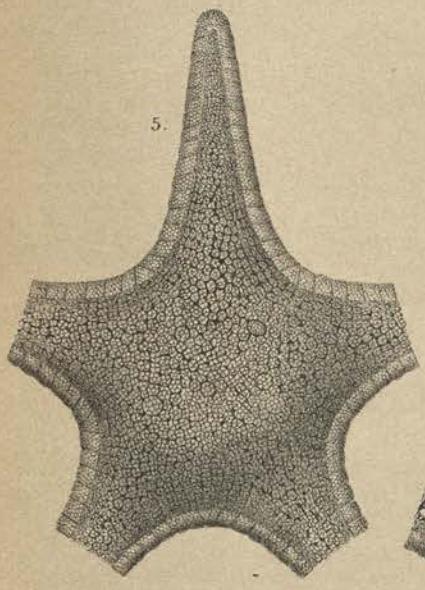
Fig. 6. Actinal aspect of a young example; magnified 3 diameters.

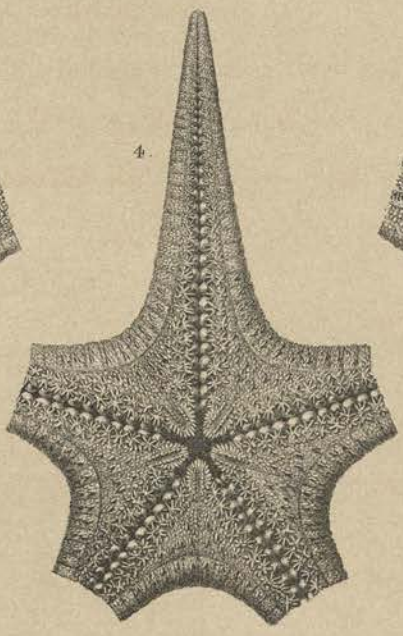
[For figures of adult examples of this species see Pl. XLVIII. figs. 1–4; for magnified details see Pl. XLIX. figs. 5–10.]

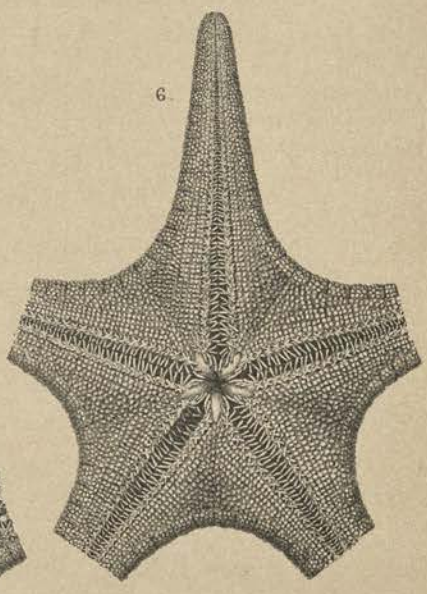












F.H. Michael del. Hollick lith.

Hanhart imp.

1-2. PSEUDARCHASTER DISCUS, n.sp. 3-4. PSEUDARCHASTER INTERMEDIUS, n.sp.
5-6. GNATHASTER ELONGATUS, n.sp. (juv.).

PLATE XX.

PLATE XX.

Page

Figs. 1–7. PORCELLANASTER CÆRULEUS, Wyville Thomson, . . 134

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

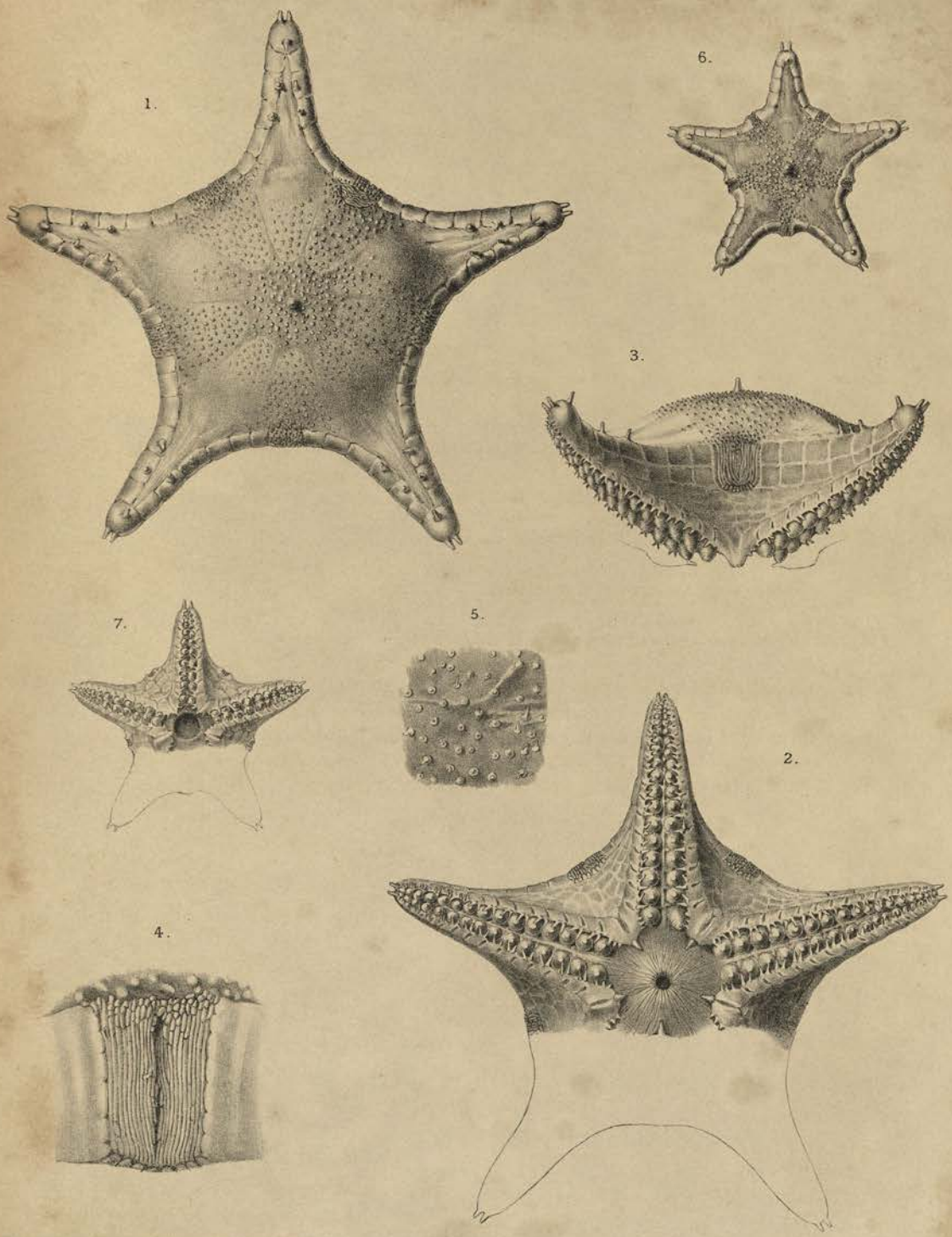
Fig. 3. Profile view; magnified 3 diameters.

Fig. 4. A cribriform organ; magnified 10 diameters.

Fig. 5. A portion of the abactinal surface; magnified 20 diameters.

Fig. 6. Abactinal aspect of a young example; magnified 3 diameters.

Fig. 7. Actinal aspect of a young example; magnified 3 diameters.



F. H. Michael del.

F. Huth, Lith^r Edin^r

PORCELLANASTER CÆRULEUS, Wyville Thomson.

PLATE XX[A].

PLATE XX[A].

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Figs. 1–10. PORCELLANASTER CÆRULEUS, Wyville Thomson, . . 134

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

Fig. 3. Profile view; magnified 3 diameters.

Fig. 4. A portion of the actinostome, showing the buccal membrane, and an adjacent radial area; magnified 5 diameters.

Fig. 5. An actinal interradial area; magnified 6 diameters.

Fig. 6. A terminal plate, abactinal aspect; magnified about 7 diameters.

Fig. 7. Actinal aspect of the same; magnified about 7 diameters.

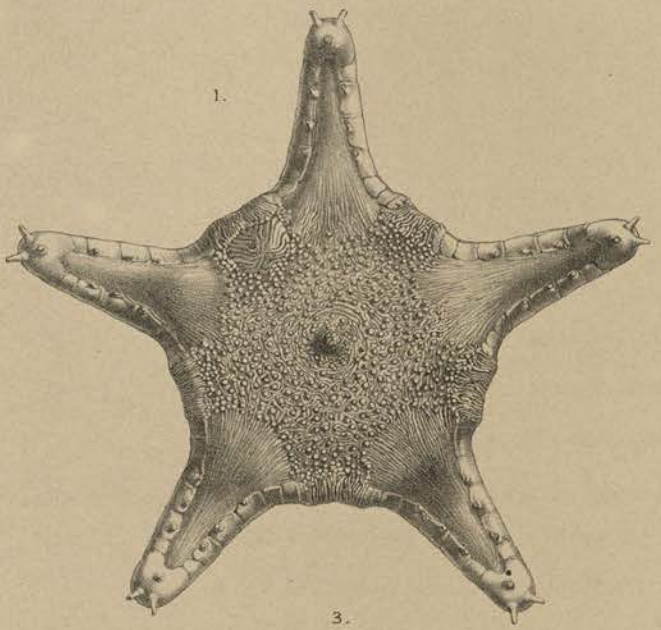
Fig. 8. A pair of ambulacral plates, seen in profile; magnified 5 diameters.

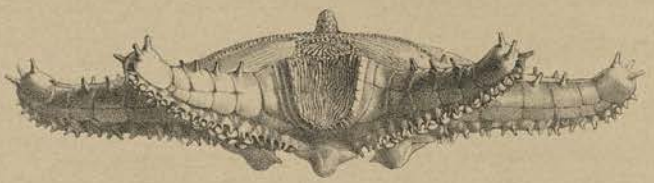
Fig. 9. Ambulacral plates seen from above; magnified 5 diameters.

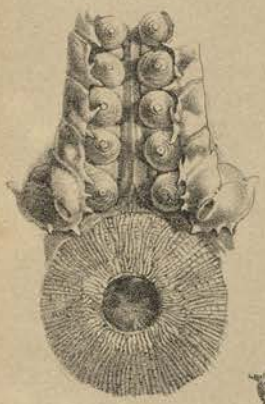
Fig. 10. Lateral view of the same, showing the adambulacral plates; magnified 5 diameters. [The character of the latter is somewhat exaggerated.]

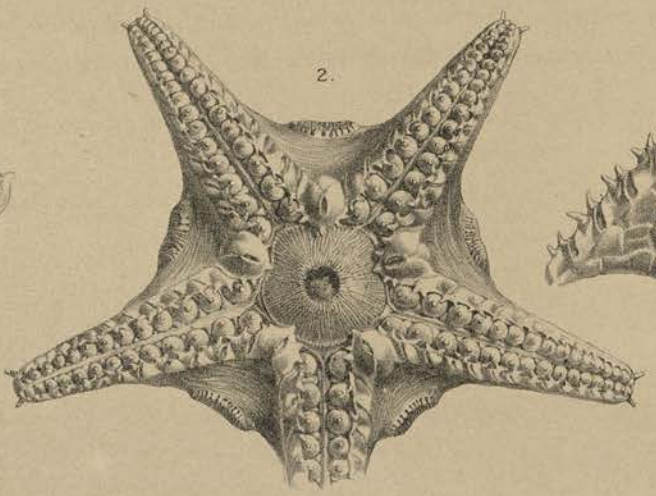
[These figures appear to have been drawn from a dried or shrunken example.

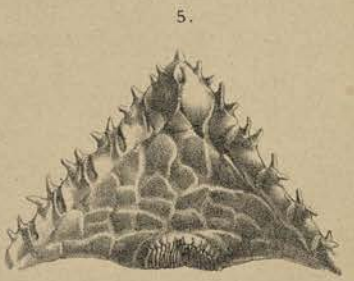
The plate was prepared under the direction of Sir Wyville Thomson, and I was unfortunately not aware of its existence until the greater part of the text and nearly all the plates had been printed off.]











W. G. Black. del. F. Huth Lith^r Edin^r

PORCELLANASTER CÆRULEUS, Wyville Thomson.

PLATE XXI.

PLATE XXI.

Page

Figs. 1–4. HYPHALASTER DIADEMATUS, n. sp. . . . 159

Fig. 1. Abactinal aspect; magnified 4 diameters.

Fig. 2. Actinal aspect; magnified 4 diameters.

Fig. 3. Profile view; magnified 4 diameters.

Fig. 4. A portion of the abactinal surface; magnified about 14 diameters.

[For magnified details of this species see Pl. XXVIII. figs. 17–20.]

Figs. 5–10. PORCELLANASTER CAULIFER, n. sp. . . . 138

Fig. 5. Abactinal aspect; magnified 4 diameters.

Fig. 6. Actinal aspect; magnified 4 diameters.

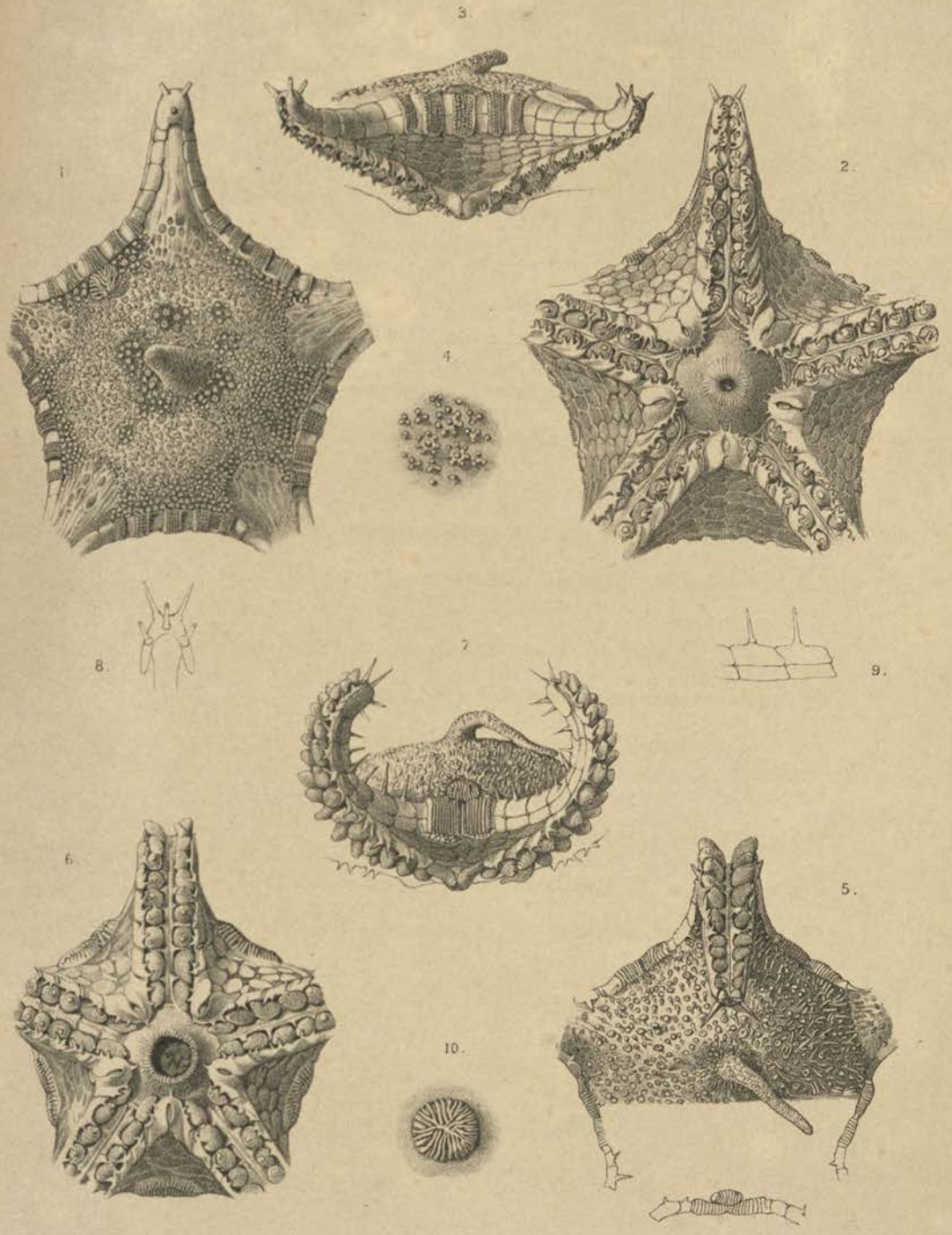
Fig. 7. Profile view; magnified 4 diameters.

Fig. 8. Diagram of the terminal plate; magnified.

Fig. 9. Diagram of the marginal plates; magnified.

Fig. 10. The madreporiform body; magnified 8 diameters.

[For magnified details of this species see Pl. XXVII. figs. 9–12.]



S. Black, del.

F. Huth, Lith. Edin.

1-4. HYPHALASTER DIADEMATUS, n. sp. 5-10. PORCELLANASTER CAULIFER, n. sp.

PLATE XXII.

PLATE XXII.

Page

Figs. 1–3. PORCELLANASTER GRACILIS, n. sp. . . . 143

Fig. 1. Abactinal aspect; magnified 5 diameters.

Fig. 2. Actinal aspect; magnified 5 diameters.

Fig. 3. Profile view; magnified 5 diameters.

[For magnified details of this species see Pl. XXVII. figs. 5–8.]

Figs. 4–7. PORCELLANASTER CRASSUS, n. sp. . . . 141

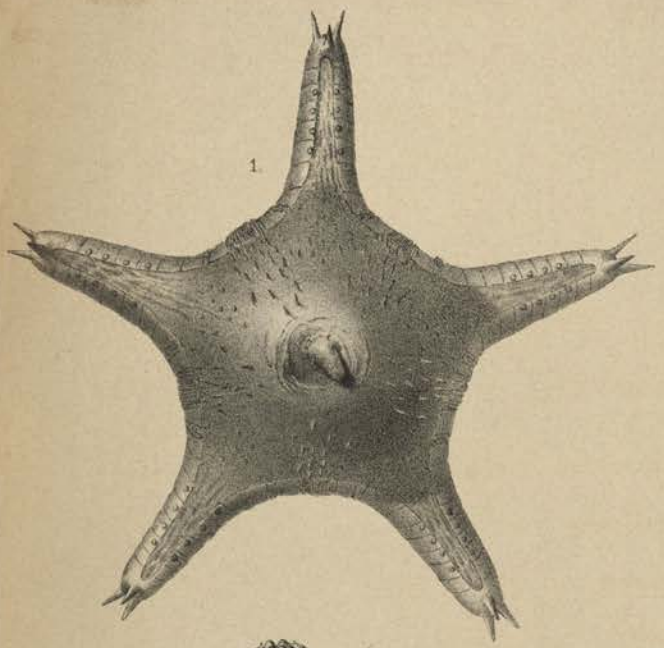
Fig. 4. Abactinal aspect; magnified 2 diameters.

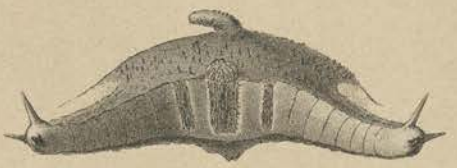
Fig. 5. Actinal aspect; magnified 2 diameters.

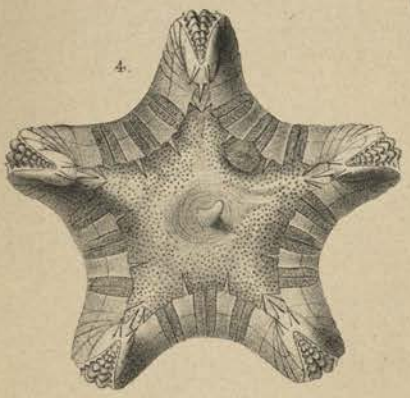
Fig. 6. Profile view; magnified 2 diameters.

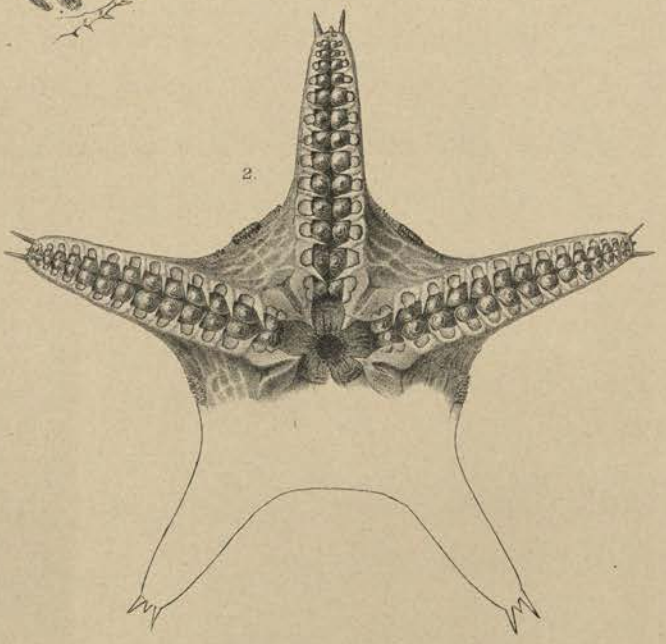
Fig. 7. Direct lateral view of a ray, in outline; magnified 2 diameters.

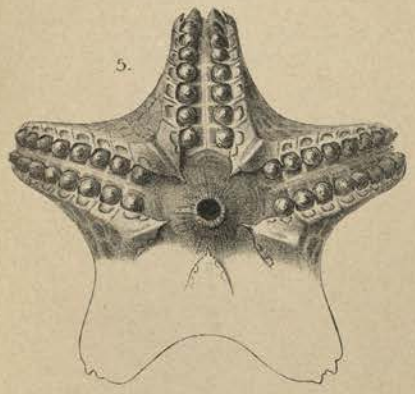
[For magnified details of this species see Pl. XXVII. figs. 1–4.]











F. H. Michael, del.

Geo. West & Sons, lith. et imp.

1–3. PORCELLANASTER GRACILIS, n. sp. 4–7. PORCELLANASTER CRASSUS, n. sp.

PLATE XXIII.

PLATE XXIII.

Page

Figs. 1–4. PORCELLANASTER TUBEROSUS, n. sp. . . . 140

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

Fig. 3. Profile view; magnified 3 diameters.

Fig. 4. Direct lateral view of a ray, in outline; magnified 3 diameters.

[For magnified details of this species see Pl. XXVII. figs. 13–16.]

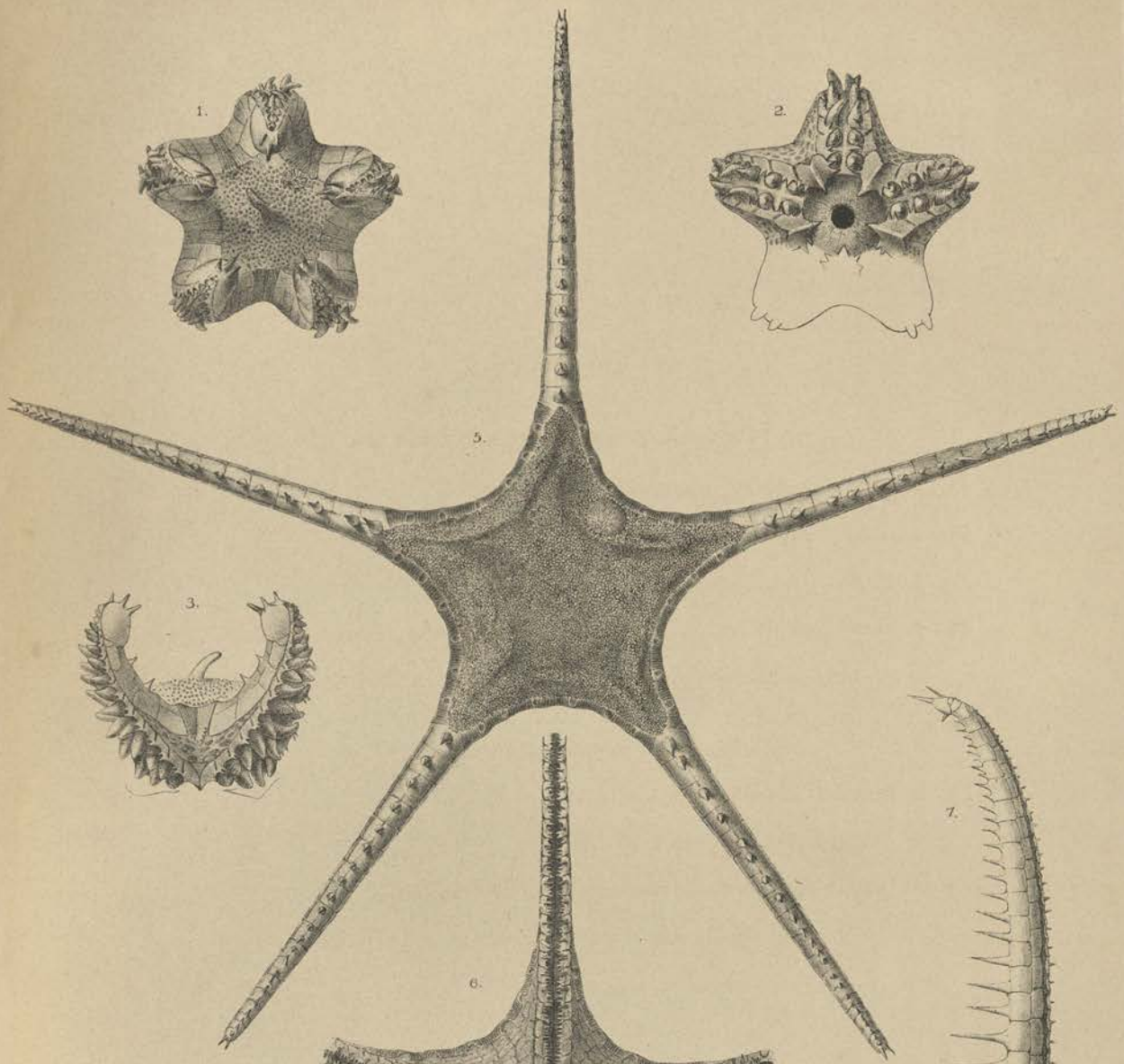
Figs. 5–7. STYRACASTER HORRIDUS, n. sp. . . . 150

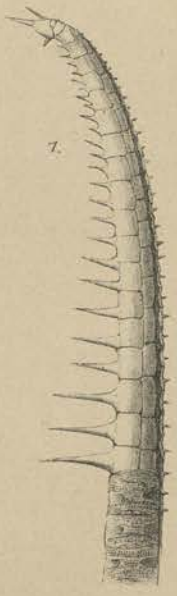
Fig. 5. Abactinal aspect; magnified 1½ diameters.

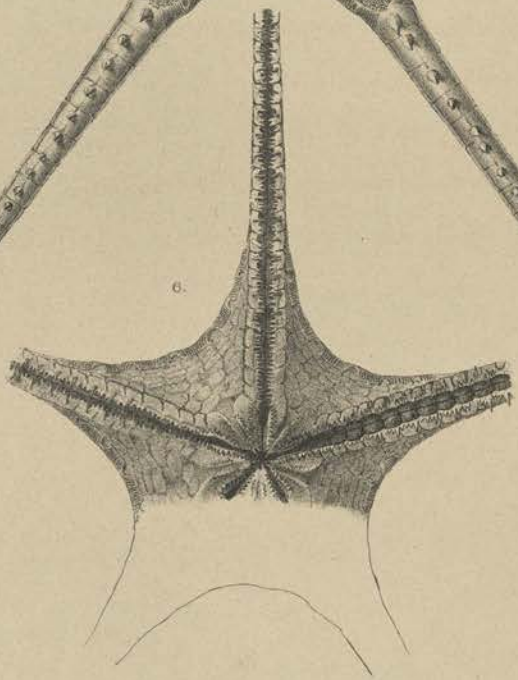
Fig. 6. Actinal aspect; magnified 1½ diameters.

Fig. 7. Direct lateral view of a ray; magnified 1½ diameters.

[For magnified details of this species see Pl. XXVII. figs. 17–20.]







F. H. Michael, del.

Geo. West & Sons lith. et imp.

1-4. PORCELLANASTER TUBEROSUS, n. sp. 5-7. STYRACASTER HORRIDUS, n. sp.

PLATE XXIV.

PLATE XXIV.

Page

Figs. 1–4. STYRACASTER ARMATUS, n. sp. . . . 153

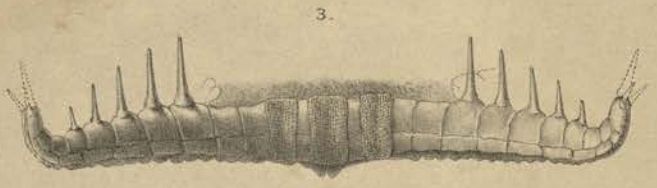
Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

Fig. 3. Profile view; magnified 2 diameters.

Fig. 4. Lateral view of a ray; magnified 2 diameters.

[For magnified details of this species see Pl. XXVIII. figs. 1–4.]



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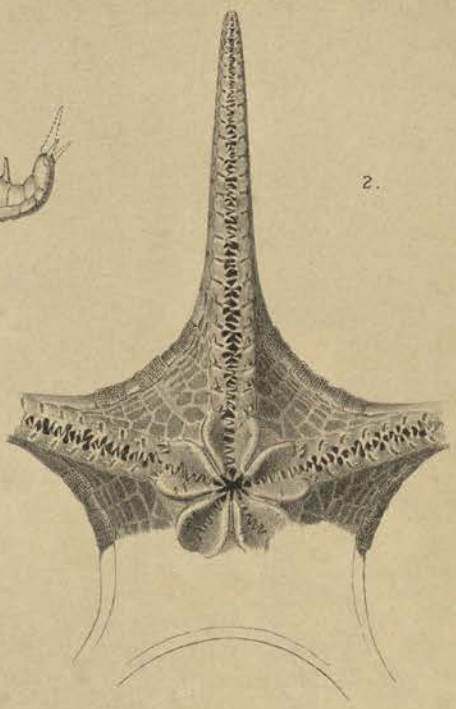

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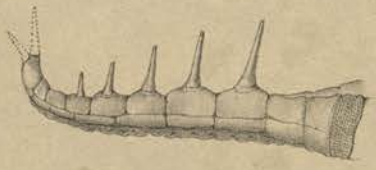

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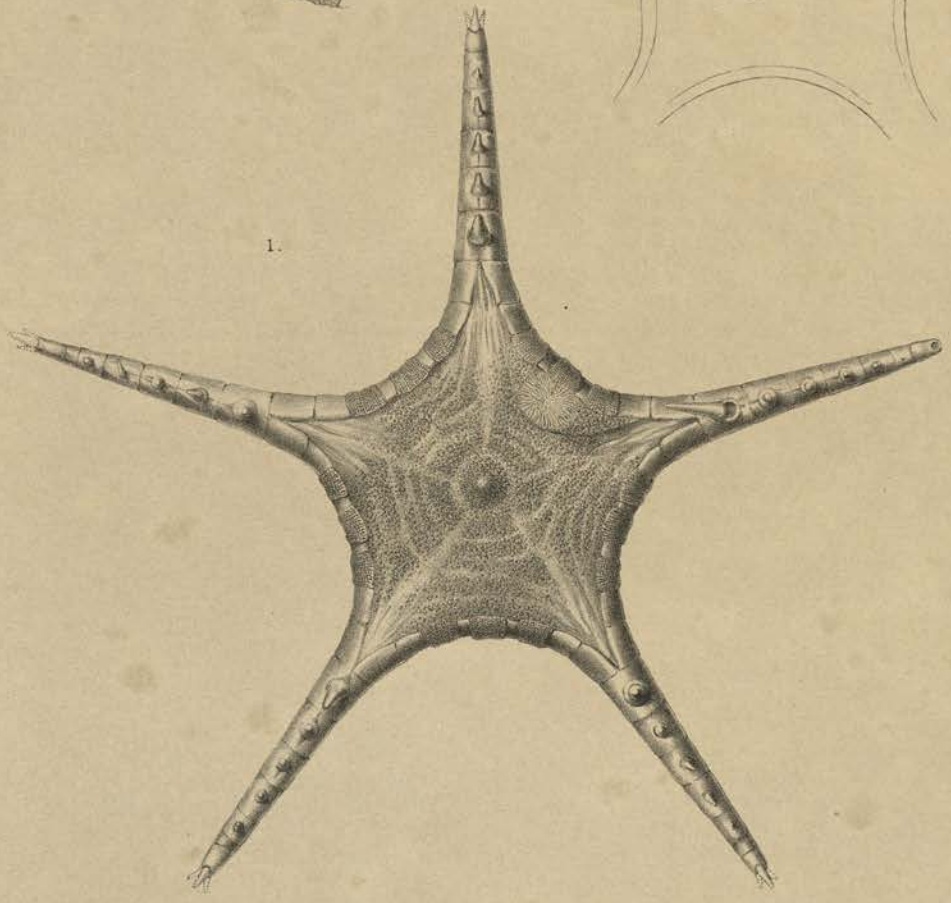


F.H. Michael del.

STYRACASTER ARMATUS, n. sp.

PLATE XXV.

PLATE XXV.

Page

Figs. 1–3. HYPHALASTER PLANUS, n. sp. 165

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

Fig. 3. Profile view; magnified 2 diameters.

[For magnified details of this species see Pl. XXVIII. figs 9–12.]

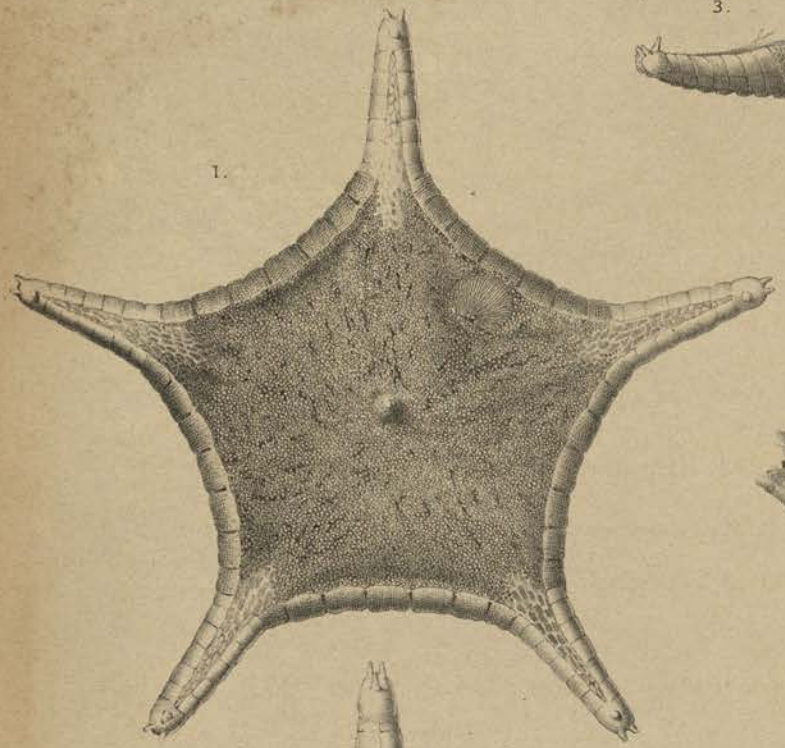
Figs. 4–6. HYPHALASTER INERMIS, n. sp. . . . 162

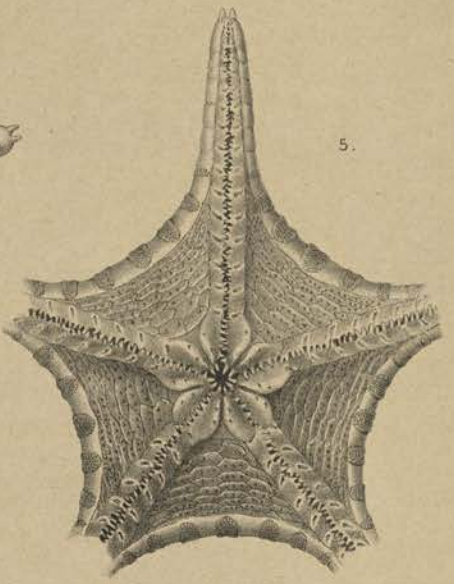
Fig. 4. Abactinal aspect; magnified 3 diameters.

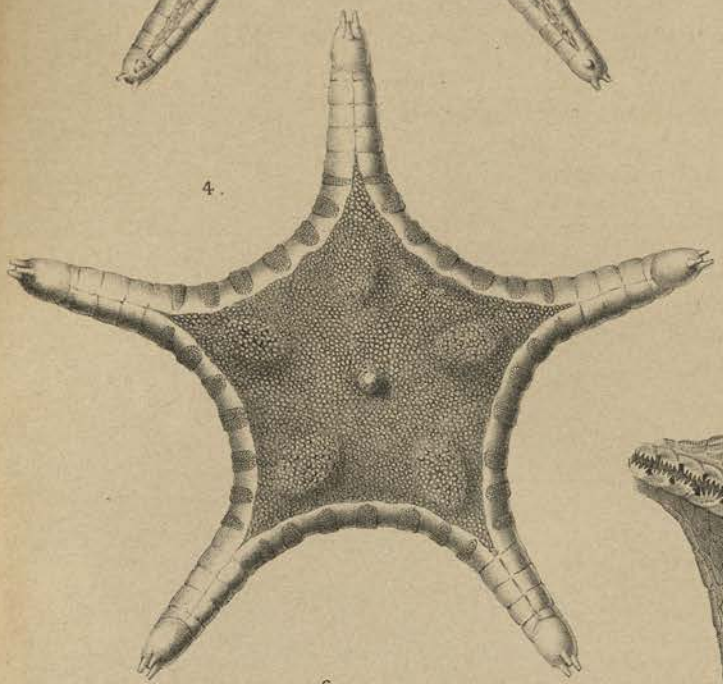
Fig. 5. Actinal aspect; magnified 3 diameters.

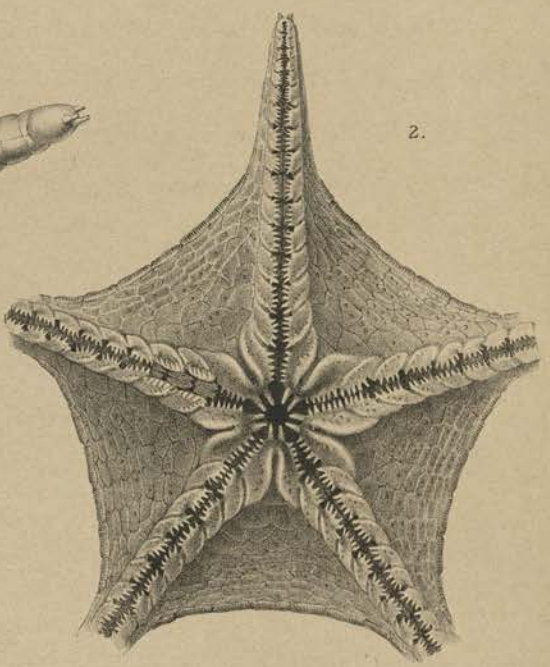
Fig. 6. Profile view; magnified 3 diameters.

[For magnified details of this species see Pl. XXVIII. figs. 5–8.]









F.H. Michael del. F. Huth, Lith^r Edin^r

1-3. HYPHALASTER PLANUS, n. sp. 4-6. HYPHALASTER INERMIS, n. sp.

PLATE XXVI.

PLATE XXVI.

Figs. 1–6. HYPHALASTER HYALINUS, n. sp. . . .

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

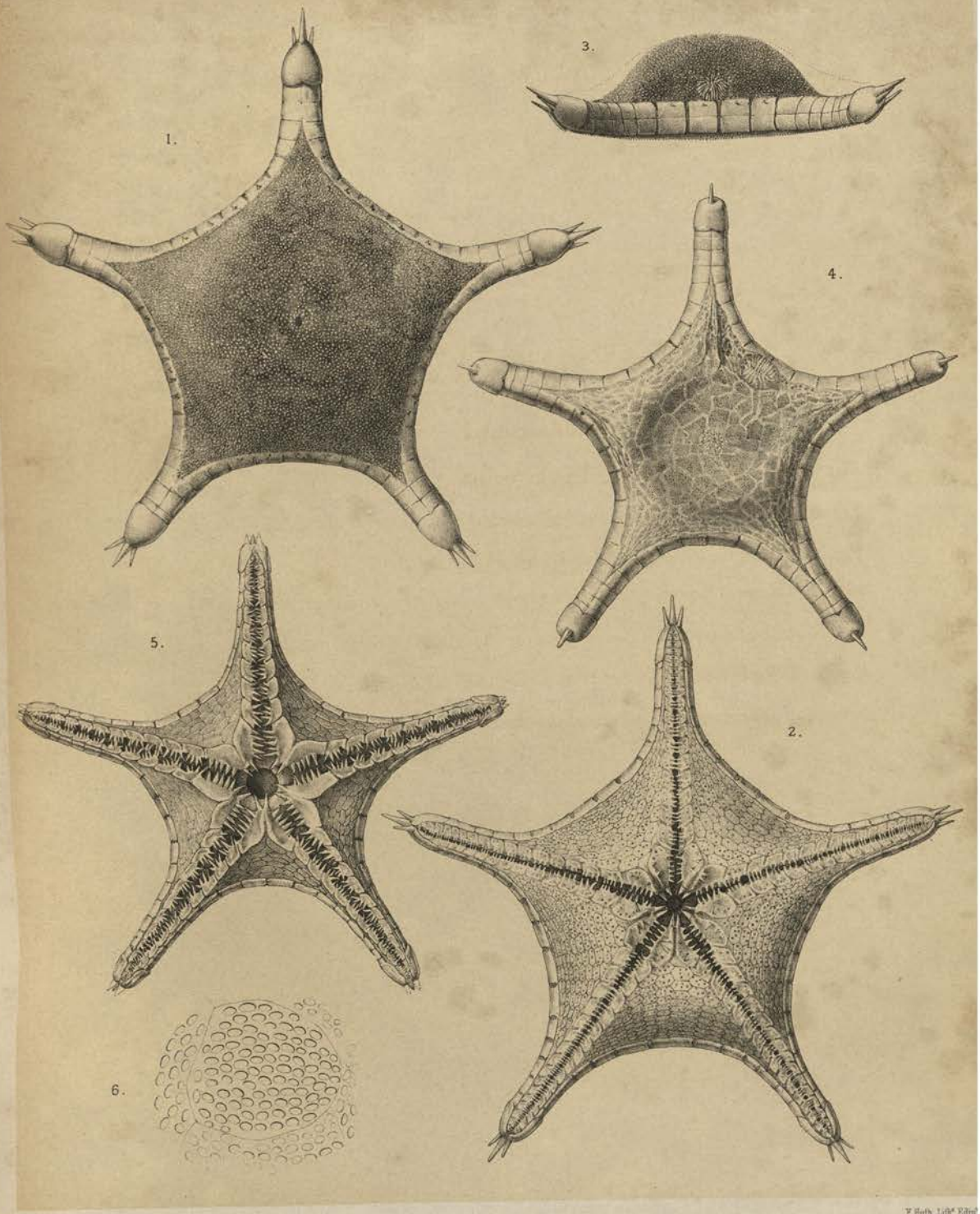
Fig. 3. Profile view; magnified 3 diameters.

Fig. 4. Abactinal aspect of a young example; magnified 4 diameters.

Fig. 5. Actinal aspect of a young example; magnified 4 diameters.

Fig. 6. An embryonic abactinal plate; magnified 54 diameters.

[For magnified details of this species see Pl. XXVIII. figs. 13–16.]



F.H. Michael del.

F. Huth, Lith. Edin.

HYPHALASTER HYALINUS, n. sp.

PLATE XXVII.

PLATE XXVII.

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Figs. 1–4. PORCELLANASTER CRASSUS, n. sp. . . . 141

Fig. 1. A portion of the abactinal surface; magnified 20 diameters.
Fig. 2. Mouth-plates; magnified 5 diameters.
Fig. 3. Adambulacral plates, with segmental pits and papillæ; magnified 10 diameters.
Fig. 4. A cribriform organ; magnified 6 diameters.
[For macroscopic figures of this species see Pl. XXII. figs. 4–7.]

Figs. 5–8. PORCELLANASTER GRACILIS, n. sp. . . . 143

Fig. 5. A portion of the abactinal surface; magnified 15 diameters.
Fig. 6. Mouth-plates; magnified 10 diameters.
Fig. 7. Adambulacral plates, with segmental pits and papillæ; magnified 18 diameters.
Fig. 8. A cribriform organ; magnified 15 diameters.
[For macroscopic figures of this species see Pl. XXII. figs. 1–3.]

Figs. 9–12. PORCELLANASTER CAULIFER, n. sp. . . . 138

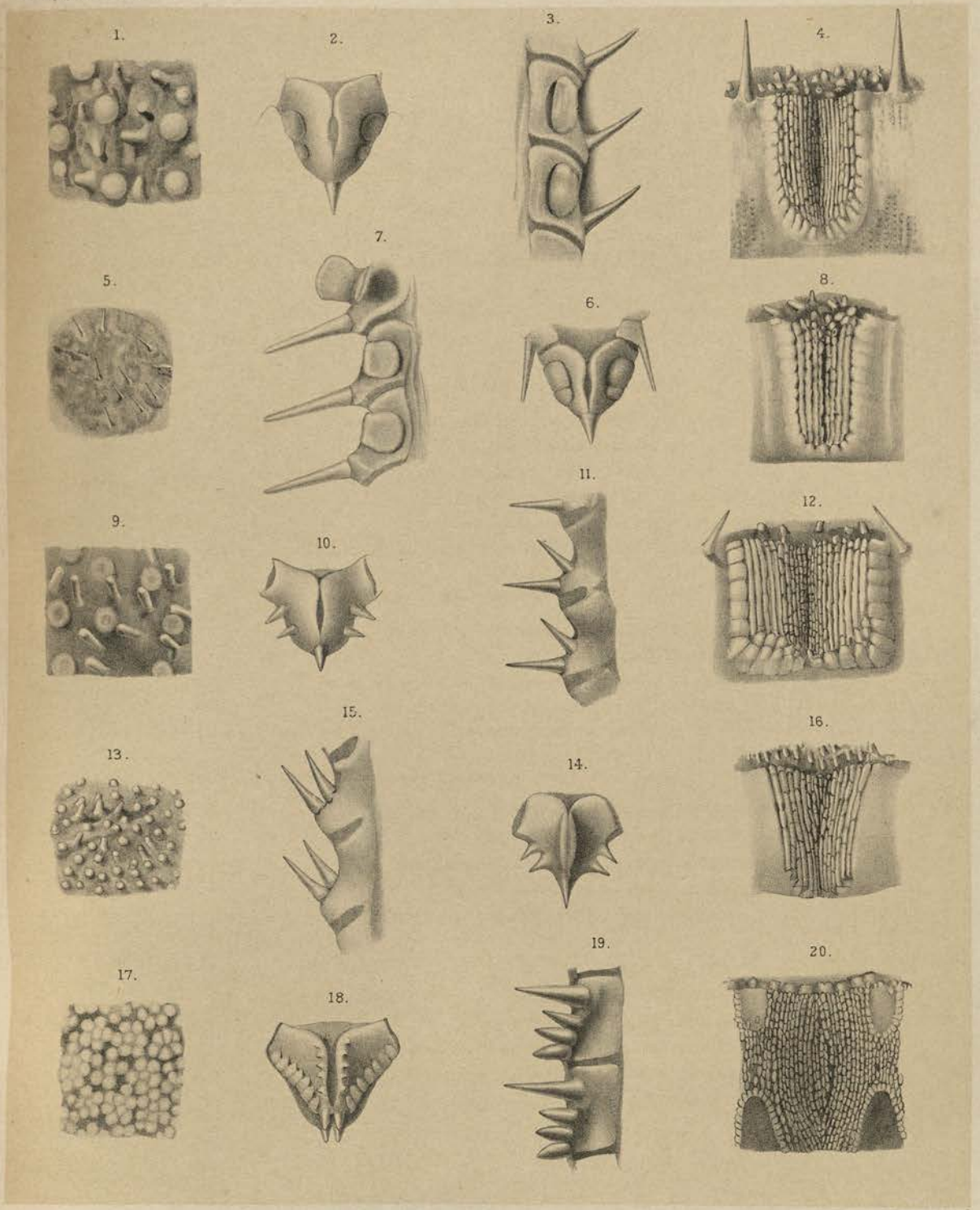
Fig. 9. A portion of the abactinal surface; magnified 20 diameters.
Fig. 10. Mouth-plates; magnified 10 diameters.
Fig. 11. Adambulacral plates; magnified 15 diameters.
Fig. 12. A cribriform organ; magnified 12 diameters.
[For macroscopic figures of this species see Pl. XXI. figs. 5–10.]

Figs. 13–16. PORCELLANASTER TUBEROSUS, n. sp. . . . 140

Fig. 13. A portion of the abactinal surface; magnified 20 diameters.
Fig. 14. Mouth-plates; magnified 8 diameters.
Fig. 15. Adambulacral plates; magnified 16 diameters.
Fig. 16. A cribriform organ; magnified 9 diameters.
[For macroscopic figures of this species see Pl. XXIII. figs. 1–4.]

Figs. 17–20. STYRACASTER HORRIDUS, n. sp. . . . 150

Fig. 17. A portion of the abactinal surface; magnified 20 diameters.
Fig. 18. Mouth-plates; magnified 4 diameters.
Fig. 19. Adambulacral plates; magnified 8 diameters.
Fig. 20. A cribriform organ; magnified 5 diameters.
[For macroscopic figures of this species see Pl. XXIII. figs. 5–7.]



P. H. Michael del. F. Huth, Lith. Edinr.

1-4. PORCELLANASTER CRASSUS, n.sp. 5-8. PORCELLANASTER GRACILIS, n.sp.
9-12. PORCELLANASTER CAULIFER, n.sp. 13-16. PORCELLANASTER TUBEROSUS, n.sp.
17-20. STYRACASTER HORRIDUS, n.sp.

PLATE XXVIII.

PLATE XXVIII.

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Figs. 1–4. STYRACASTER ARMATUS, n. sp. . . . 153

Fig. 1. A portion of the abactinal surface; magnified 18 diameters.
Fig. 2. Mouth-plates; magnified 5 diameters.
Fig. 3. Adambulacral plates; magnified 9 diameters.
Fig. 4. A cribriform organ; magnified 6 diameters.

[For macroscopic figures of this species see Pl. XXIV. figs. 1–4.]

Figs. 5–8. HYPHALASTER INERMIS, n. sp. . . . 162

Fig. 5. A portion of the abactinal surface; magnified 20 diameters.
Fig. 6. Mouth-plates; magnified 9 diameters.
Fig. 7. Adambulacral plates; magnified 12 diameters.
Fig. 8. A cribriform organ; magnified 9 diameters.

[For macroscopic figures of this species see Pl. XXV. figs. 4–6.]

Figs. 9–12. HYPHALASTER PLANUS, n. sp. 165

Fig. 9. A portion of the abactinal surface; magnified 18 diameters.
Fig. 10. Mouth-plates; magnified 5 diameters.
Fig. 11. Adambulacral plates; magnified 8 diameters.
Fig. 12. A cribriform organ; magnified 6 diameters.

[For macroscopic figures of this species see Pl. XXV. figs. 1–3.]

Figs. 13–16. HYPHALASTER HYALINUS, n. sp. . . . 156

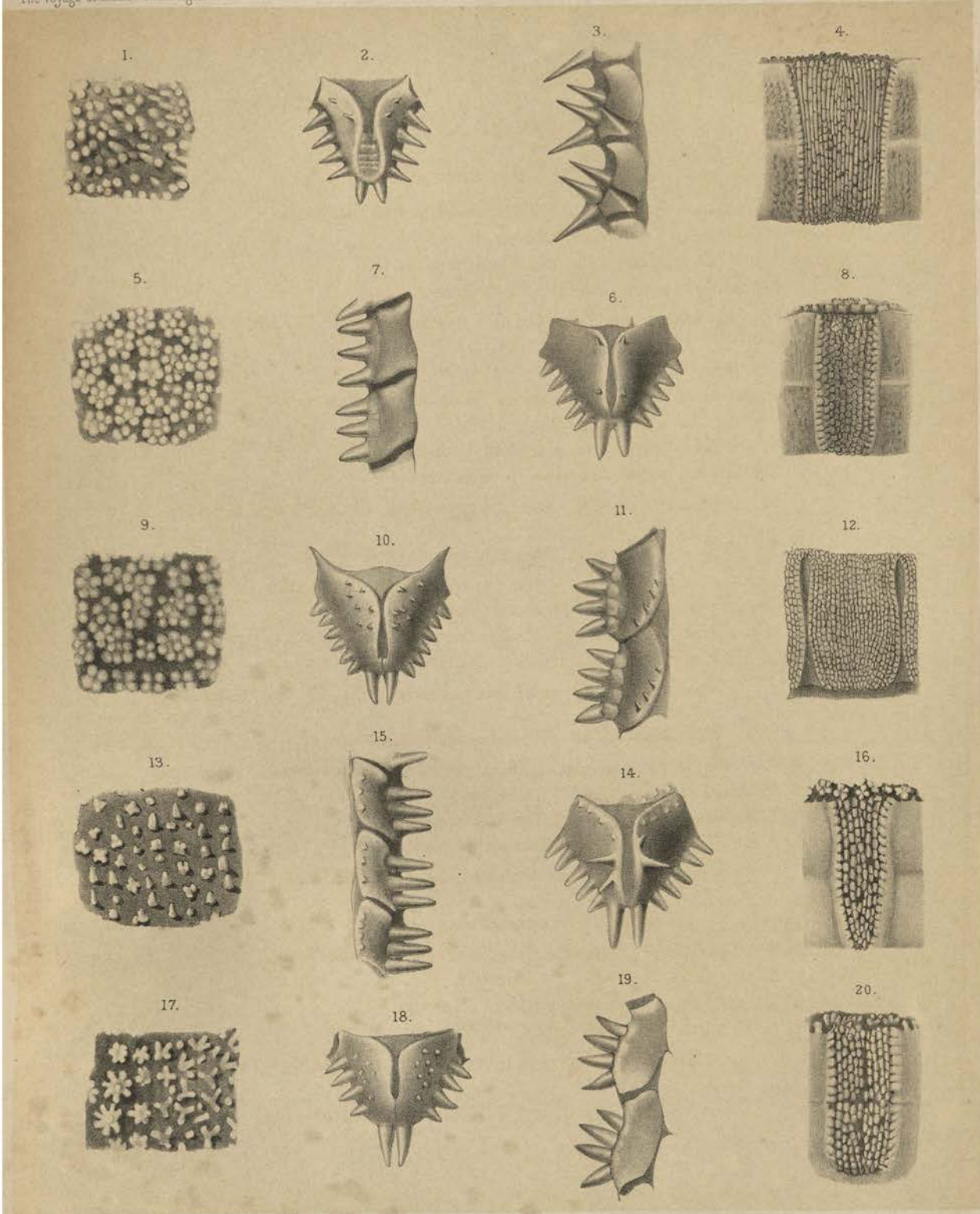
Fig. 13. A portion of the abactinal surface; magnified 15 diameters.
Fig. 14. Mouth-plates; magnified 9 diameters.
Fig. 15. Adambulacral plates; magnified 12 diameters.
Fig. 16. A cribriform organ; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XXVI. figs. 1–5.]

Figs. 17–20. HYPHALASTER DIADEMATUS, n. sp. . . . 159

Fig. 17. A portion of the abactinal surface; magnified 20 diameters.
Fig. 18. Mouth-plates; magnified 10 diameters.
Fig. 19. Adambulacral plates; magnified 15 diameters.
Fig. 20. A cribriform organ; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XXI. figs. 1–4.]



F. H. Michael del.

F. Huth, Lith^r Edin^r

1-4. STYRACASTER ARMATUS, n. sp. 5-8. HYPHALASTER INERMIS, n. sp.
9-12. HYPHALASTER PLANUS, n. sp. 13-16. HYPHALASTER HYALINUS, n. sp.
17-20. HYPHALASTER DIADEMATUS, n. sp.

PLATE XXIX.

PLATE XXIX.

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Figs. 1–6. THORACASTER CYLINDRATUS, n. sp. . . . 168

Fig. 1. Abactinal aspect; natural size.

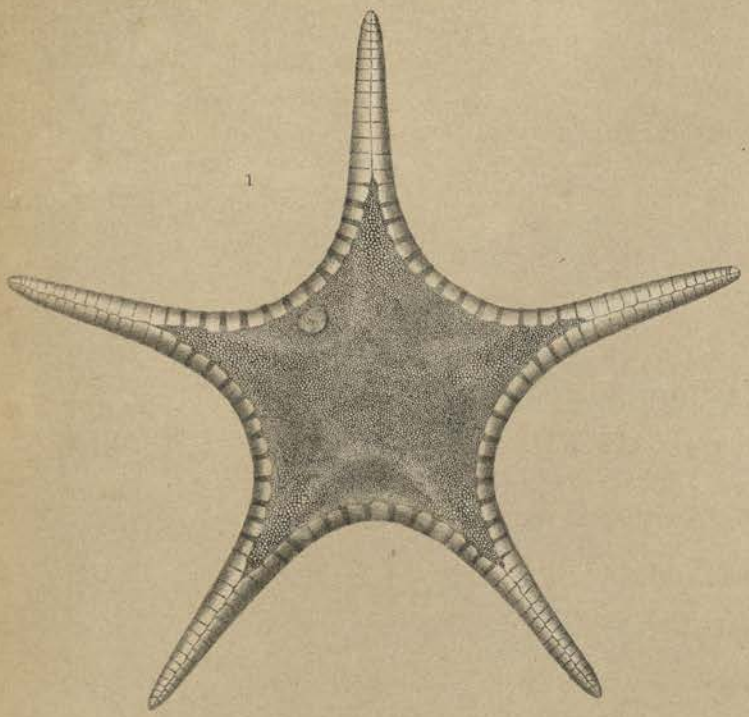
Fig. 2. Actinal aspect; natural size.

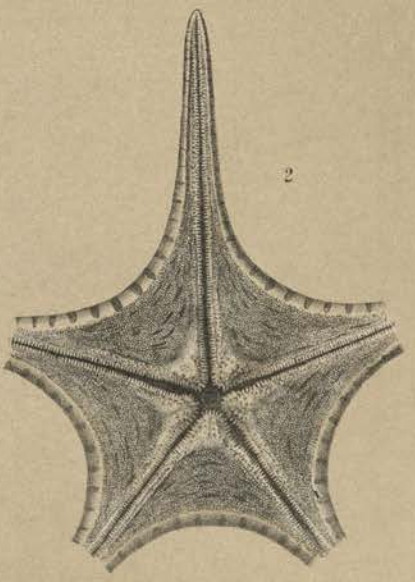
Fig. 3. Profile view; natural size.

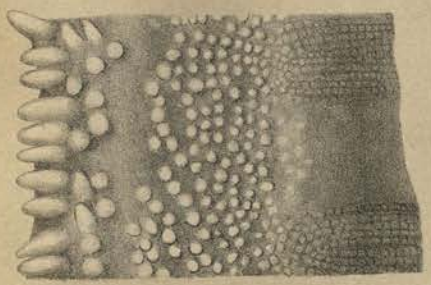
Fig. 4. A portion of the abactinal surface; magnified 10 diameters.

Fig. 5. Mouth-plates; magnified.

Fig. 6. A portion of the actinal surface of a ray, showing adambulacral plates and infero-marginal plates; magnified 10 diameters.







F.H. Michael del. Hollick, lith. Hanhart imp.

THORACASTER CYLINDRATUS, n.sp.

PLATE XXX.

PLATE XXX.

Page

Figs. 1–6. CTENODISCUS AUSTRALIS, Lütken, ... 172

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

Fig. 3. Profile view; magnified 2 diameters.

Fig. 4. A portion of the abactinal surface; magnified 12 diameters.

Fig. 5. Adambulacral plates and the adjacent portion of the actinal surface; magnified 12 diameters.

Fig. 6. The extremity of a ray; magnified.

Figs. 7–12. CTENODISCUS PROCURATOR, n. sp. . . . 173

Fig. 7. Abactinal aspect; magnified 2 diameters.

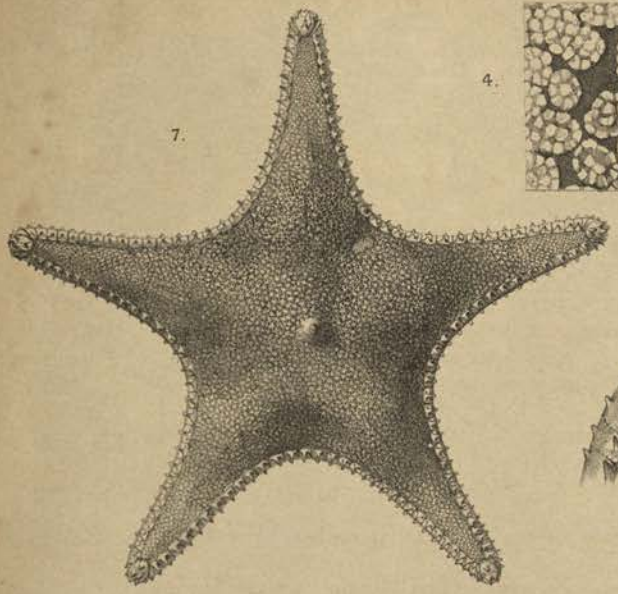
Fig. 8. Actinal aspect; magnified 2 diameters.

Fig. 9. A portion of the abactinal surface; magnified 16 diameters.

Fig. 10. Adambulacral plates and the adjacent portion of the actinal surface; magnified 8 diameters.

Fig. 11. Abactinal aspect of a young example; natural size.

Fig. 12. Mouth-plates; magnified.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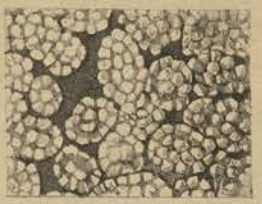
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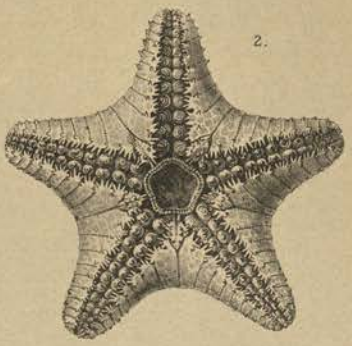
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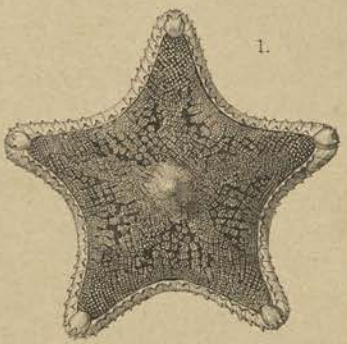
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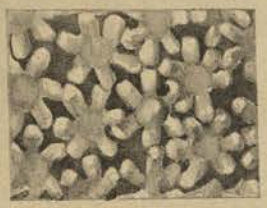
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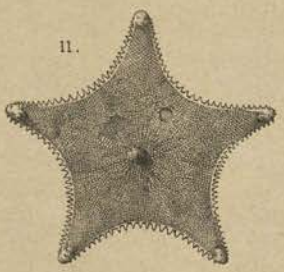
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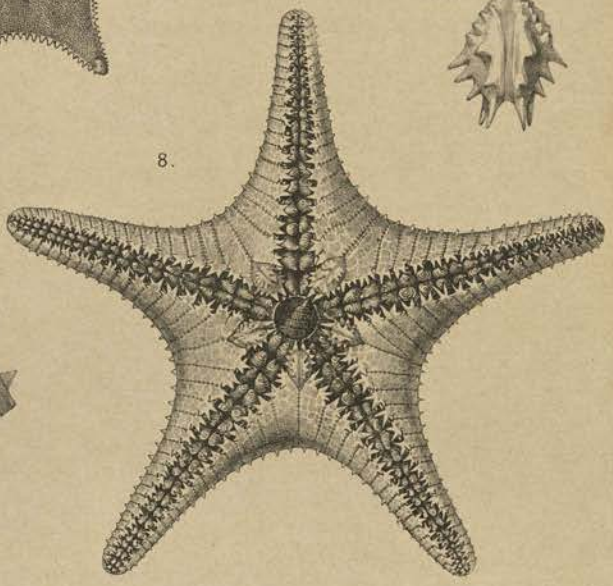
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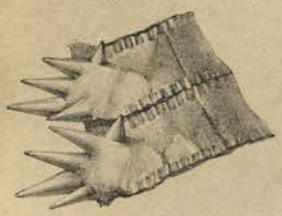
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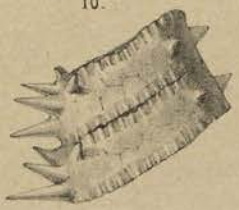
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F. H. Michael del. F. Huth, Lithr. Edinr.

1-6. CTENODISCUS AUSTRALIS, Lütken. 7-12. CTENODISCUS PROCURATOR, n. sp.

PLATE XXXI.

PLATE XXXI.

Page

Figs. 1, 2. LEPTOPTYCHASTER KERGUELENENSIS, Smith, . . 184

Fig. 1. Abactinal aspect, showing immature young *in situ;* magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XXXII. figs. 1, 2.]

Figs. 3, 4. LEPTOPTYCHASTER ANTARCTICUS, n. sp. . . . 190

Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

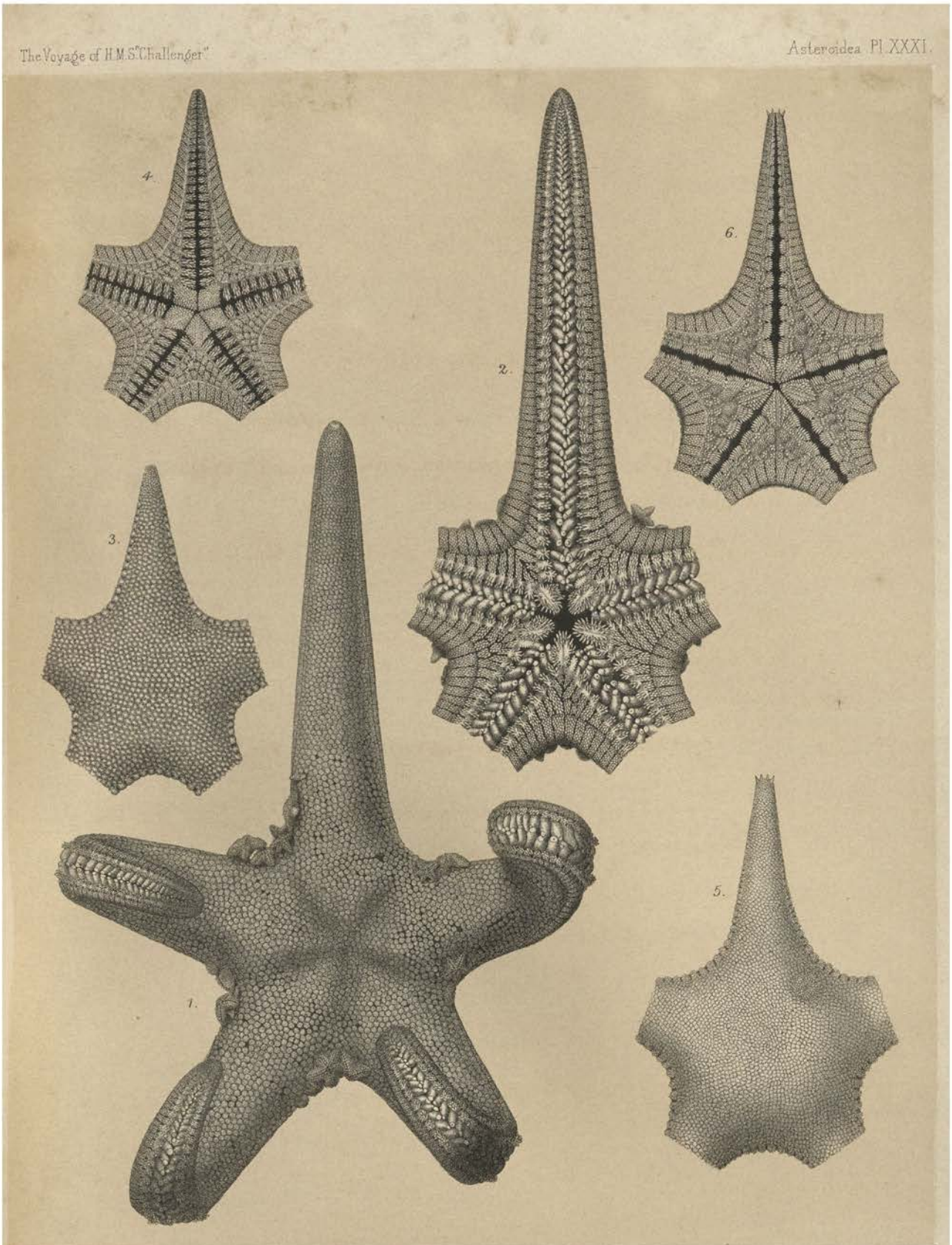
[For magnified details of this species see Pl. XXXII. figs. 7, 8.]

Figs. 5, 6. LONCHOTASTER FORCIPIFER, n. sp. . . . 106

Fig. 5. Abactinal aspect; magnified 3 diameters.

Fig. 6. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. XXXII. figs. 9, 10.]



W.H. Crowther del. Hollick lith Hanhart, imp

1-2. LEPTOPTYCHASTER KERGUELENENSIS, Smith. 3-4. LEPTOPTYCHASTER ANTARCTICUS, n. sp.
5-6. LONCHOTASTER FORCIPIFER, n. sp.

PLATE XXXII.

PLATE XXXII.

Page

Figs. 1, 2. LEPTOPTYCHASTER KERGUELENENSIS, Smith, . . 184

Fig. 1. A portion of the abactinal surface; magnified 25 diameters.

Fig. 2. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XXXI. figs. 1, 2.]

Figs. 3, 4. DYTASTER NOBILIS, n. sp. 73

Fig. 3. A portion of the abactinal surface; magnified 15 diameters.

Fig. 4. Adambulacral and infero-marginal plates; magnified 10 diameters.

[For macroscopic figures of this species see Pl. III. figs. 1, 2.]

Figs. 5, 6. DYTASTER MADREPORIFER, n. sp. . . . 70

Fig. 5. A portion of the abactinal surface; magnified 25 diameters.

Fig. 6. Adambulacral and infero-marginal plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. III. figs. 3, 4.]

Figs. 7, 8. LEPTOPTYCHASTER ANTARCTICUS, n. sp. . . . 190

Fig. 7. A portion of the abactinal surface; magnified 35 diameters.

Fig. 8. Adambulacral and infero-marginal plates; magnified 20 diameters.

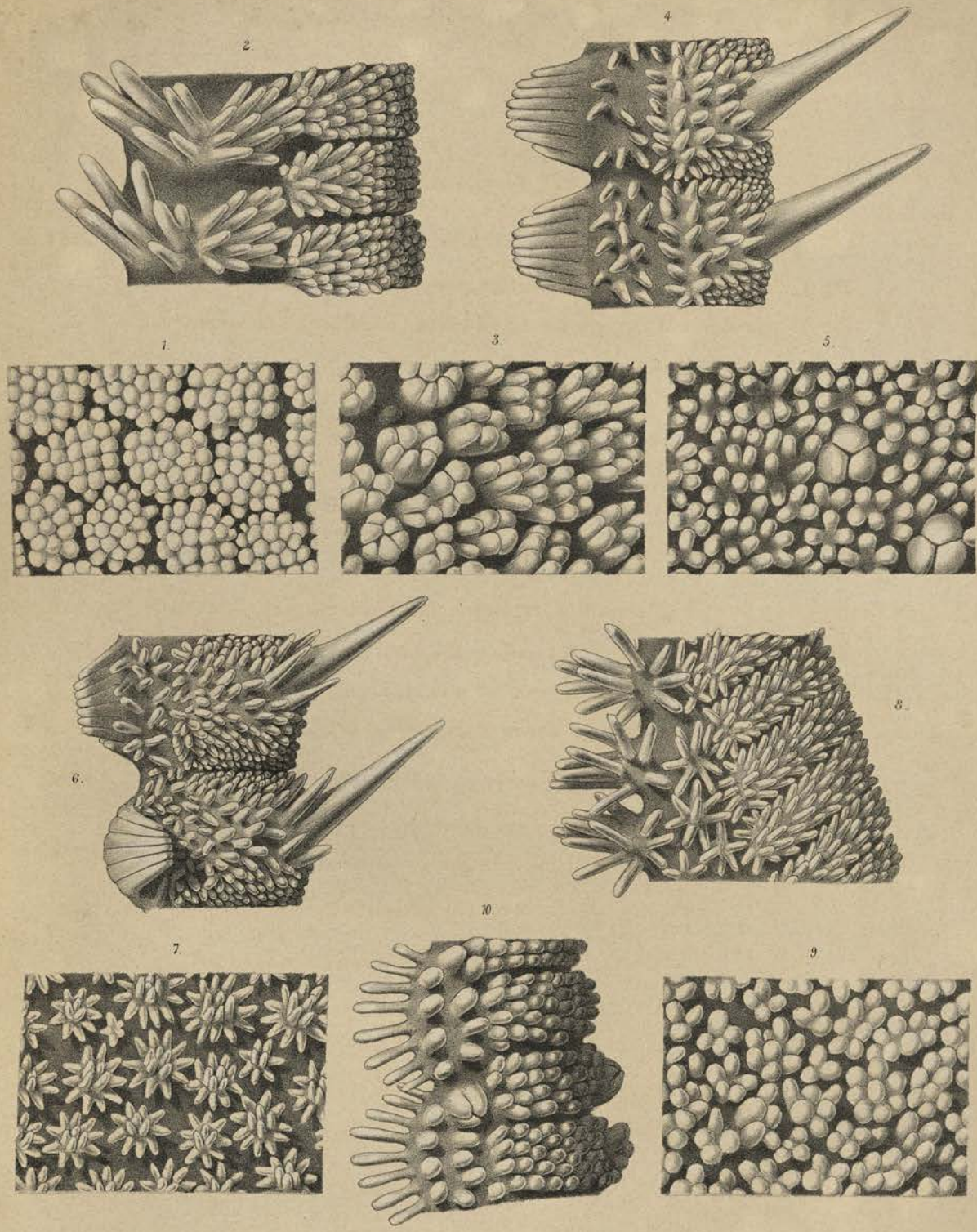
[For macroscopic figures of this species see Pl. XXXI. figs. 3, 4.]

Figs. 9, 10. LONCHOTASTER FORCIPIFER, n. sp. . . . 106

Fig. 9. A portion of the abactinal surface; magnified 35 diameters.

Fig. 10. Adambulacral and infero-marginal plates; magnified 20 diameters.

[For macroscopic figures of this species see Pl. XXXI. figs. 5, 6.]



W. H. Crowther del. F. H. Michael lith.

Mintern Bros. imp.

1–2. LEPTOPTYCHASTER KERGUELENENSIS, Smith, n.sp. 3–4. DYTASTER NOBILIS, n.sp.
5–6. DYTASTER MADREPORIFER, n.sp. 7–8. LEPTOPTYCHASTER ANTARCTICUS, n.sp.
9–10 LONCHOTASTER FORCIPIFER, n.sp.

PLATE XXXIII.

PLATE XXXIII.

Figs. 1, 2. ASTROPECTEN BREVISPINUS, n. sp. . . .

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XXXVII. figs. 1–3.]

Figs. 3, 4. ASTROPECTEN PECTINATUS, n. sp. . . .

Fig. 3. Abactinal aspect; magnified 1½ diameters.

Fig. 4. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XXXVII. figs. 4–6.]

Figs. 5, 6. ASTROPECTEN HERMATOPHILUS, n. sp. . . .

Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

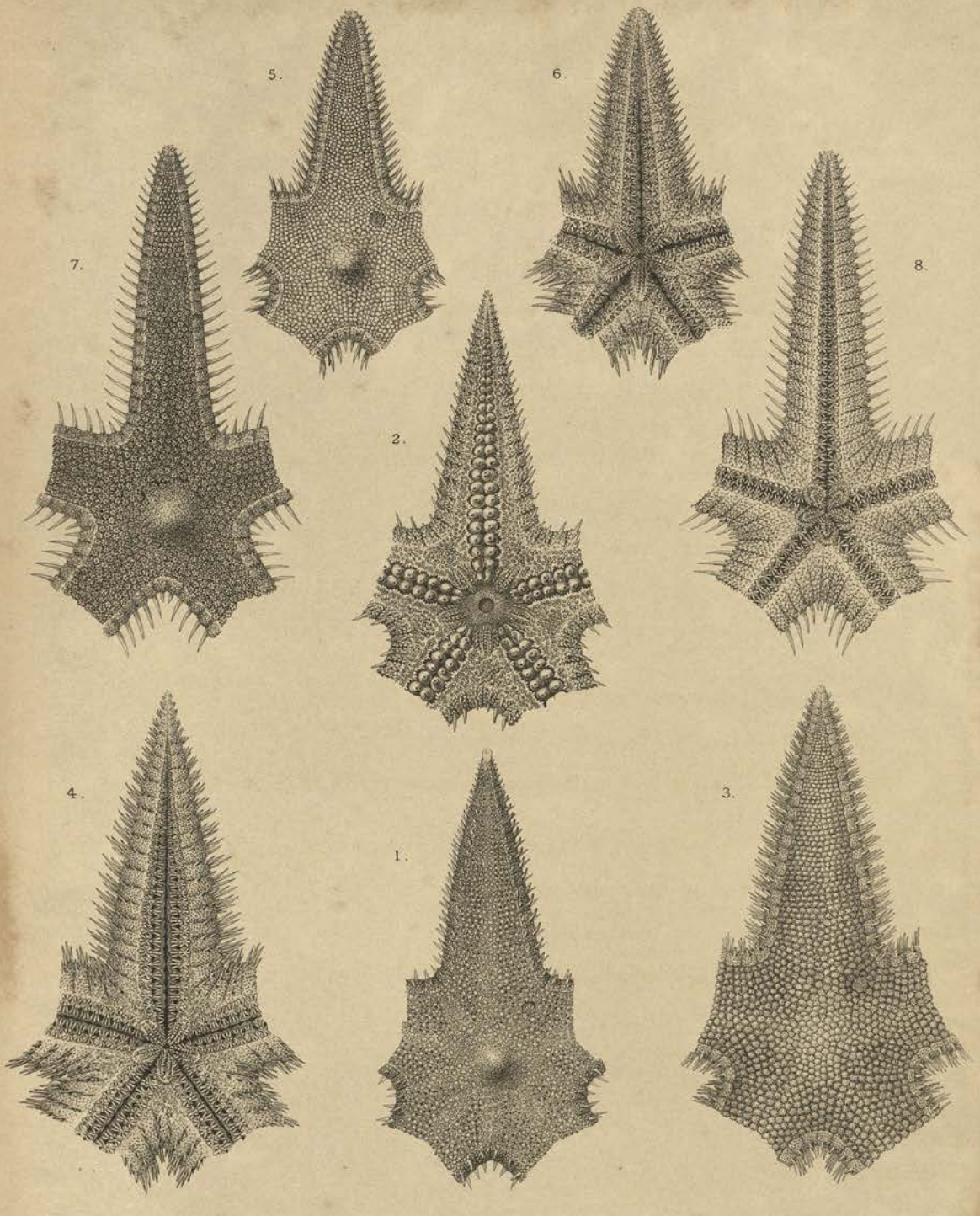
[For magnified details of this species see Pl. XXXVII. figs. 7–9.]

Figs. 7, 8. ASTROPECTEN MONACANTHUS, n. sp. . . .

Fig. 7. Abactinal aspect; magnified 3 diameters.

Fig. 8. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. XXXVII. figs. 10–12.]



P. H. Michael del.

P. Huth, Lith^r Sc^ie

1-2. ASTROPECTEN BREVISPINUS, n. sp.
3-4. ASTROPECTEN PECTINATUS, n. sp.
5-6. ASTROPECTEN HERMATOPHILUS, n. sp.
7-8. ASTROPECTEN MONACANTHUS, n. sp.

PLATE XXXIV.

PLATE XXXIV.

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Figs. 1, 2. ASTROPECTEN ACANTHIFER, n. sp. . . . 203

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XXXVIII. figs. 1–3.]

Figs. 3, 4. ASTROPECTEN IMBELLIS, n. sp. . . . 206

Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

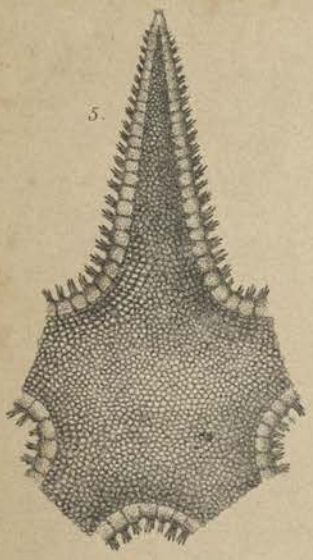
[For magnified details of this species see Pl. XXXVIII. figs. 4–6.]

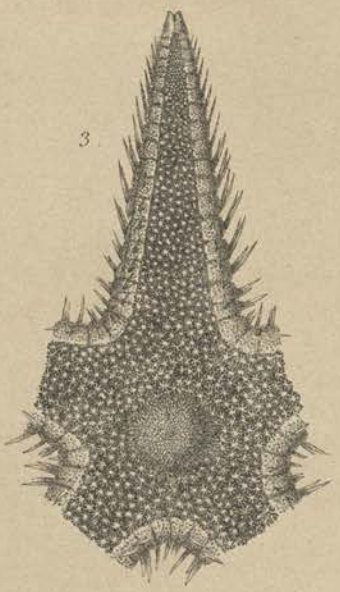
Figs. 5, 6. ASTROPECTEN MESACTUS, n. sp. . . . 219

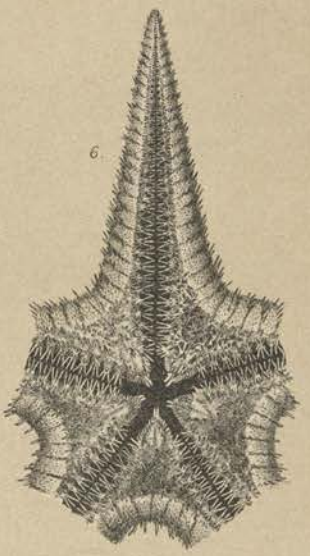
Fig. 5. Abactinal aspect; magnified 2 diameters.

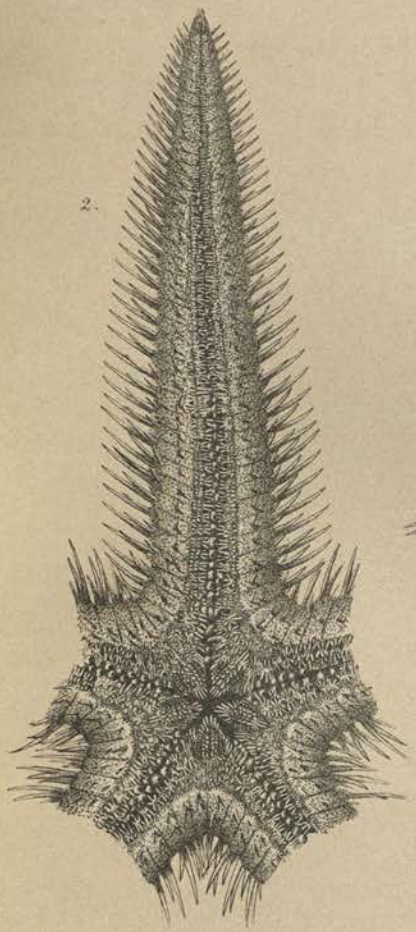
Fig. 6. Actinal aspect; magnified 2 diameters.

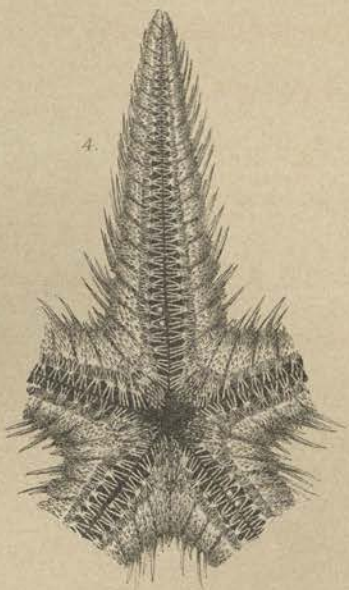
[For magnified details of this species see Pl. XXXVIII. figs. 7–9.]

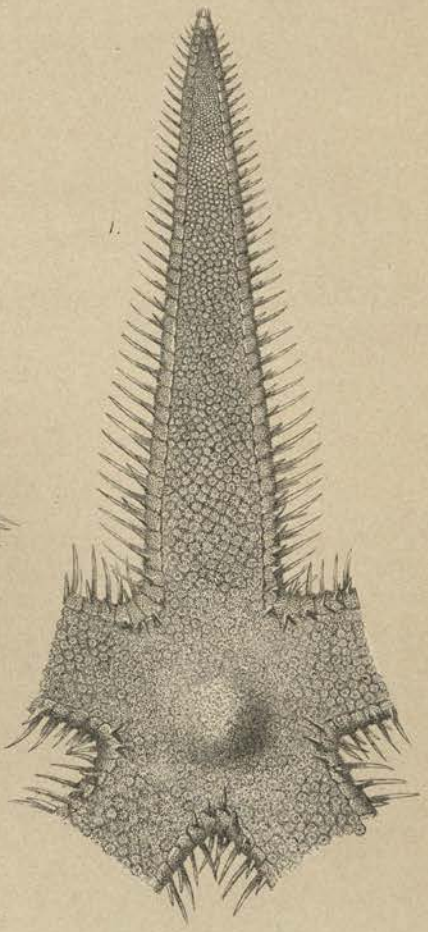












P.H. Michael, del. Hollick, lith. Hanhart. imp.

1-2. ASTROPECTEN ACANTHIFER, n.sp. 3-4. ASTROPECTEN IMBELLIS, n.sp.
5-6. ASTROPECTEN MESACTUS, n.sp.

PLATE XXXV.

PLATE XXXV.

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Figs. 1, 2. ASTROPECTEN PONTOPORÆUS, n. sp. . . . 210

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XXXVIII. figs. 10–12.]

Figs. 3, 4. ASTROPECTEN GRANULATUS, Müller and Troschel, . . 215

Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

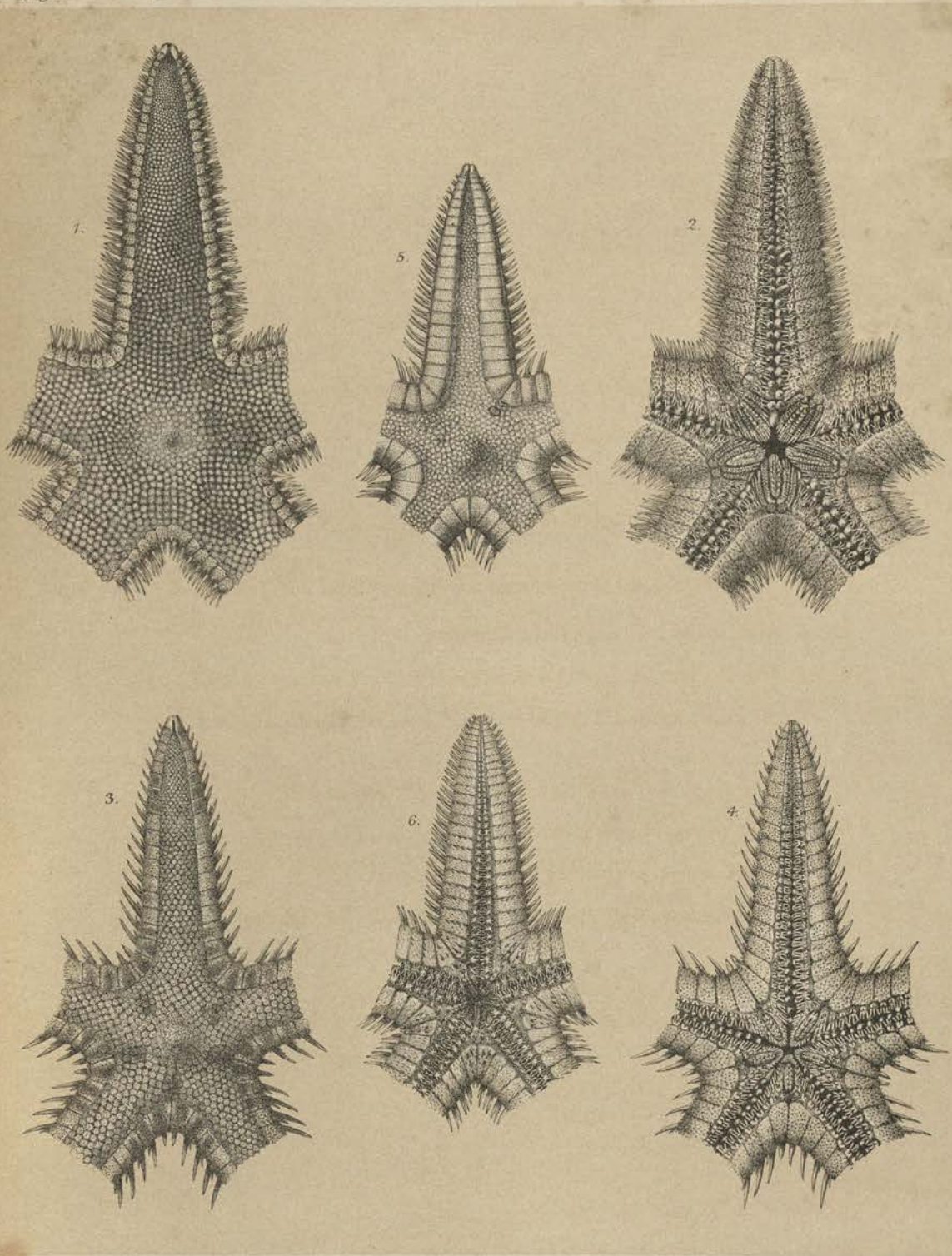
[For magnified details of this species see Pl. XXXIX. figs. 4–6.]

Figs. 5, 6. ASTROPECTEN CINGULATUS, n. sp. . . . 218

Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XXXIX. figs. 1–3.]



F.H. Michael. del. Hollick Lith.

Hanhart imp.

1-2. ASTROPECTEN PONTOPORÆUS, n.sp. 3-4. ASTROPECTEN GRANULATUS, Muller & Troschel

5-6. ASTROPECTEN GINGULATUS, n.sp

PLATE XXXVI.

PLATE XXXVI.

Page

Figs. 1, 2. BATHYBIASTER LORIPES, n. sp. . . . 240

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XLII. figs. 1, 2.]

Figs. 3, 4. ASTROPECTEN ZEBRA, n. sp. 212

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

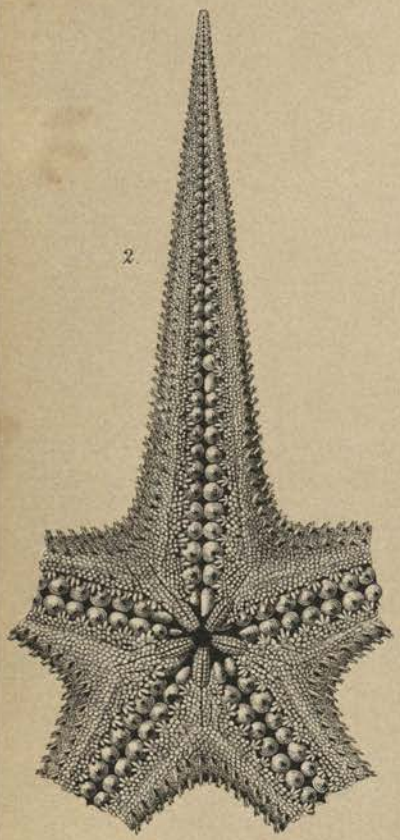
[For magnified details of this species see Pl. XXXIX. figs. 7–9.]

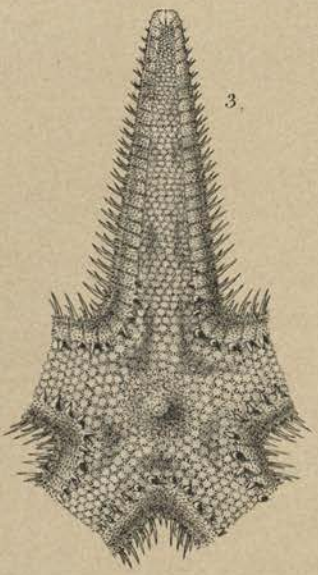
Figs. 5, 6. DYTASTER ÆQUIVOCUS, n. sp. 75

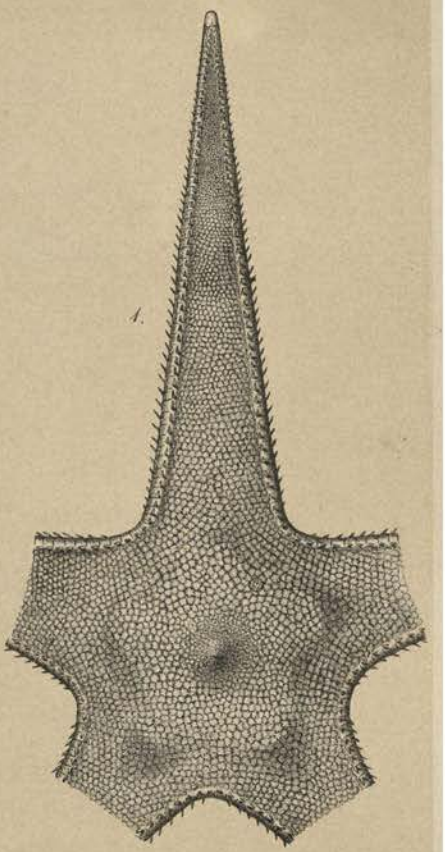
Fig. 5. Abactinal aspect; magnified 4 diameters.

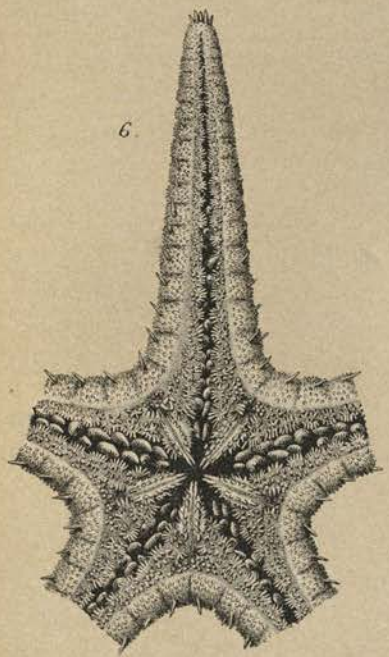
Fig. 6. Actinal aspect; magnified 4 diameters.

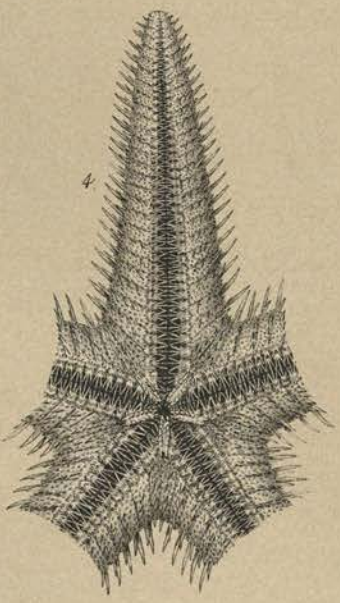
[For magnified details of this species see Pl. XXXIX. figs. 10–12.]

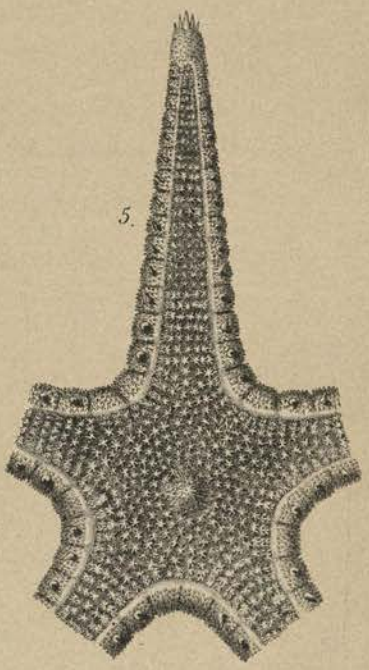












P.H. Michael, del. Hollick, lith. Hanhart imp

1-2. BATHYBIASTER LORIPES, n.sp. 3-4. ASTROPECTEN ZEBRA, n.sp.
5-6. DYTASTER ÆQUIVOCUS, n.sp.

PLATE XXXVII.

PLATE XXXVII.

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Figs. 1–3. ASTROPECTEN BREVISPINUS, n. sp. . . . 198

Fig. 1. A portion of the abactinal surface; magnified 20 diameters.

Fig. 2. Mouth-plates; magnified 12 diameters.

Fig. 3. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XXXIII. figs. 1, 2.]

Figs. 4–6. ASTROPECTEN PECTINATUS, n. sp. . . . 202

Fig. 4. A portion of the abactinal surface; magnified 15 diameters.

Fig. 5. Mouth-plates; magnified 10 diameters.

Fig. 6. Adambulacral and infero-marginal plates; magnified 8 diameters.

[For macroscopic figures of this species see Pl. XXXIII. figs. 3, 4.]

Figs. 7–9. ASTROPECTEN HERMATOPHILUS, n. sp. . . . 207

Fig. 7. A portion of the abactinal surface; magnified 25 diameters.

Fig. 8. Mouth-plates; magnified 10 diameters.

Fig. 9. Adambulacral and infero-marginal plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XXXIII. figs. 5, 6.]

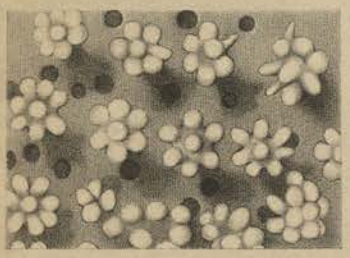
Figs. 10–12. ASTROPECTEN MONACANTHUS, n. sp. . . . 216

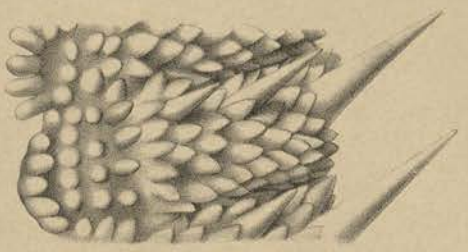
Fig. 10. A portion of the abactinal surface; magnified 25 diameters.

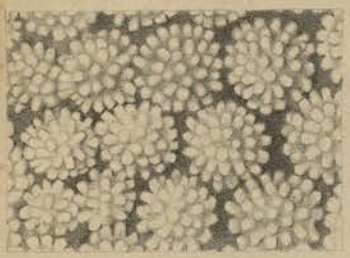
Fig. 11. Mouth-plates; magnified 20 diameters.

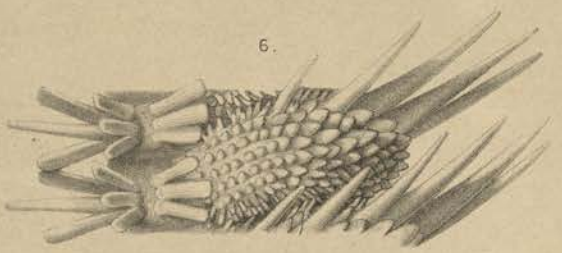
Fig. 12. Adambulacral and infero-marginal plates; magnified 20 diameters.

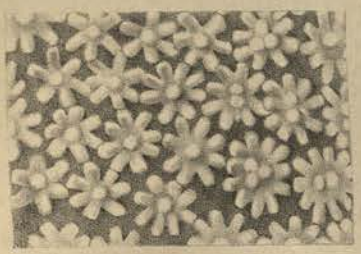
[For macroscopic figures of this species see Pl. XXXIII. figs. 7, 8.]

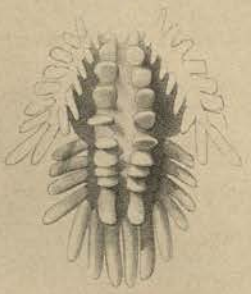


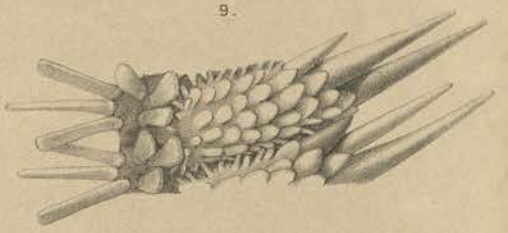


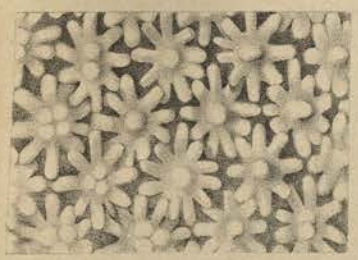


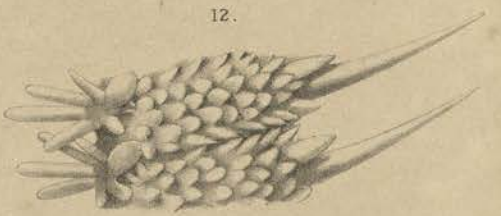












P. H. Michael del. F. Roth, Lith. Edin.

1-3. ASTROPECTEN BREVISPINUS, n. sp. 4-6. ASTROPECTEN PECTINATUS, n. sp.

7-9. ASTROPECTEN HERMATOPHILUS, n. sp. 10-12. ASTROPECTEN MONACANTHUS, n. sp.

PLATE XXXVIII.

PLATE XXXVIII.

Page

Figs. 1–3. ASTROPECTEN ACANTHIFER, n. sp. . . . 203

Fig. 1. A portion of the abactinal surface ; magnified 15 diameters.

Fig. 2. Mouth-plates ; magnified 6 diameters.

Fig. 3. Adambulacral and infero-marginal plates ; magnified 7 diameters.

[For macroscopic figures of this species see Pl. XXXIV. figs. 1, 2.]

Figs. 4–6. ASTROPECTEN IMBELLIS, n. sp. . . . 206

Fig. 4. A portion of the abactinal surface ; magnified 25 diameters.

Fig. 5. Mouth-plates ; magnified 15 diameters.

Fig. 6. Adambulacral and infero-marginal plates ; magnified 17 diameters.

[For macroscopic figures of this species see Pl. XXXIV. figs. 3, 4.]

Figs. 7–9. ASTROPECTEN MESACTUS, n. sp. . . . 219

Fig. 7. A portion of the abactinal surface ; magnified 20 diameters.

Fig. 8. Mouth-plates ; magnified 12 diameters.

Fig. 9. Adambulacral and infero-marginal plates ; magnified 10 diameters.

[For macroscopic figures of this species see Pl. XXXIV. figs. 5, 6.]

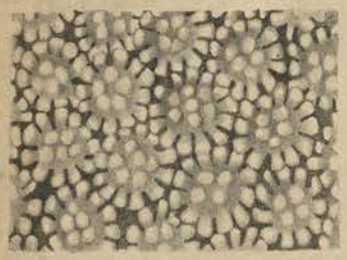
Figs. 10–12. ASTROPECTEN PONTOPORÆUS, n. sp. . . . 210

Fig. 10. A portion of the abactinal surface ; magnified 15 diameters.

Fig. 11. Mouth-plates ; magnified 6 diameters.

Fig. 12. Adambulacral and infero-marginal plates ; magnified 8 diameters.

[For macroscopic figures of this species see Pl. XXXV. figs. 1, 2.]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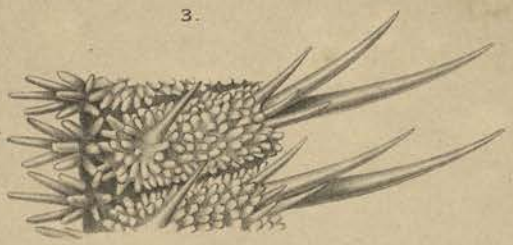
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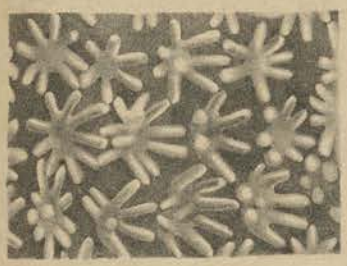
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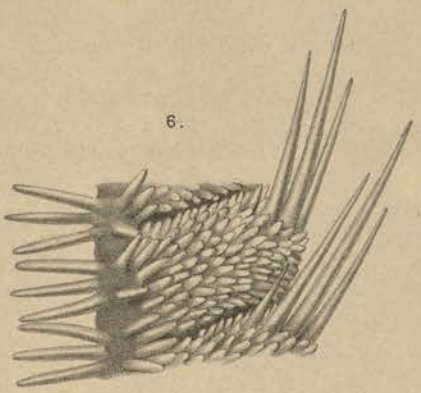
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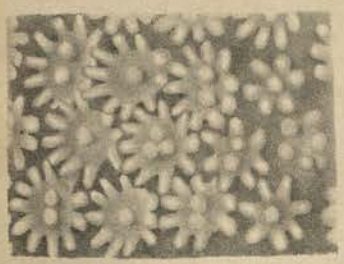
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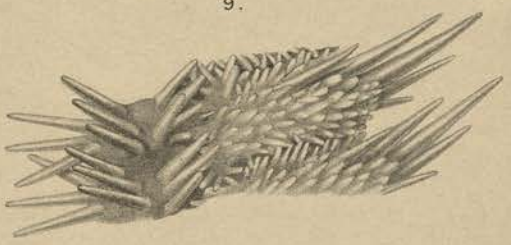
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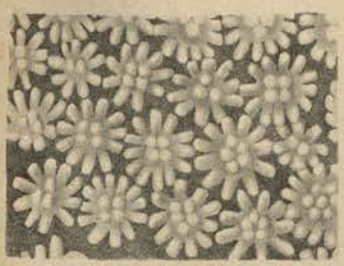
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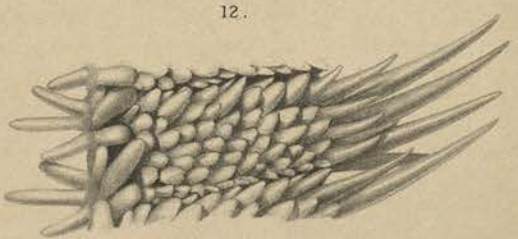
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P. H. Michael del. P. Huth, Lith^r Edin^r

1-3. ASTROPECTEN ACANTHIFER, n. sp. 4-6. ASTROPECTEN IMBELLIS, n. sp.
7-9. ASTROPECTEN MESACTUS, n. sp. 10-12. ASTROPECTEN PONTOPORÆUS, n. sp.

PLATE XXXIX.

PLATE XXXIX.

Page

Figs. 1–3. ASTROPECTEN CINGULATUS, n. sp. 218

Fig. 1. A portion of the abactinal surface; magnified 20 diameters.

Fig. 2. Mouth-plates; magnified 15 diameters.

Fig. 3. Adambulacral and infero-marginal plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XXXV. figs. 5, 6.]

Figs. 4–6. ASTROPECTEN GRANULATUS, Müller and Troschel, . . 215

Fig. 4. A portion of the abactinal surface; magnified 30 diameters.

Fig. 5. Mouth-plates; magnified 15 diameters.

Fig. 6. Adambulacral and infero-marginal plates; magnified 18 diameters.

[For macroscopic figures of this species see Pl. XXXV. figs. 3, 4.]

Figs. 7–9. ASTROPECTEN ZEBRA, n. sp. 212

Fig. 7. A portion of the abactinal surface; magnified 20 diameters.

Fig. 8. Mouth-plates; magnified 12 diameters.

Fig. 9. Adambulacral and infero-marginal plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XXXVI. figs. 3, 4.]

Figs. 10–12. DYTASTER ÆQUIVOCUS, n. sp. . . . 75

Fig. 10. A portion of the abactinal surface; magnified 30 diameters.

Fig. 11. Mouth-plates; magnified 15 diameters.

Fig. 12. Adambulacral and infero-marginal plates; magnified 30 diameters.

[For macroscopic figures of this species see Pl. XXXVI. figs. 5, 6.]

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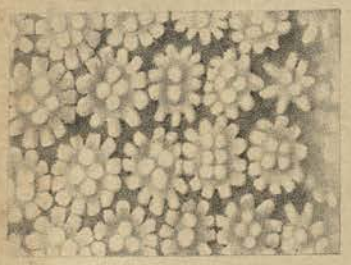

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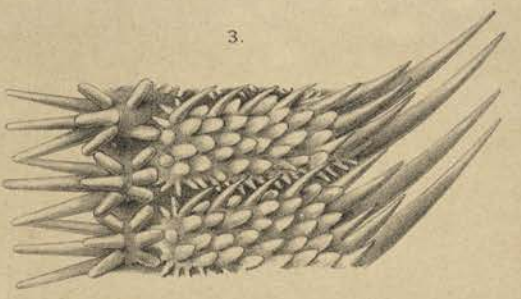

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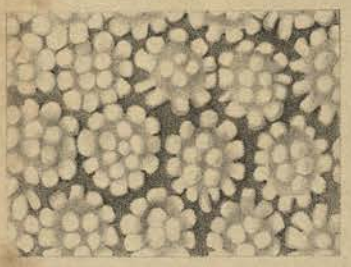

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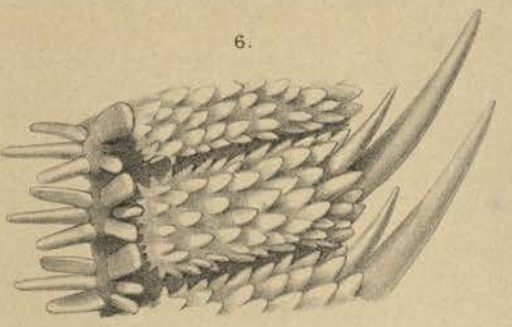

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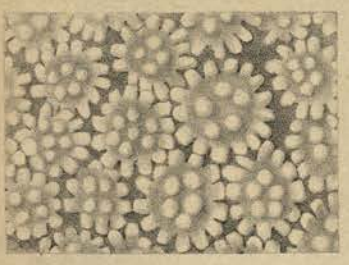

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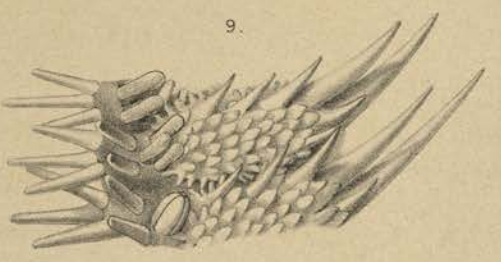

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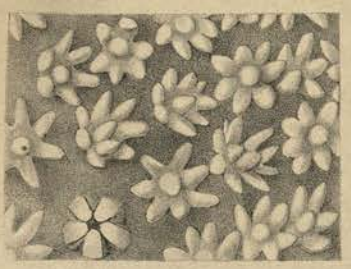

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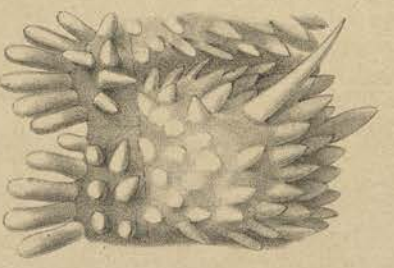


F. H. Michael del.

F. Huth, Lith^r Edin^r

1-3. ASTROPECTEN CINGULATUS, n. sp. 4-6. ASTROPECTEN GRANULATUS, Müller & Troschel.

7-9. ASTROPECTEN ZEBRA, n. sp. 10-12. DYTASTER ÆQUIVOCUS, n. sp.

PLATE XL.

PLATE XL.

Page

Figs. 1, 2. PSILASTER ACUMINATUS, n. sp. . . . 225

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XLII. figs. 7, 8.]

Figs. 3–6. PHOXASTER PUMILUS, n. sp. 236

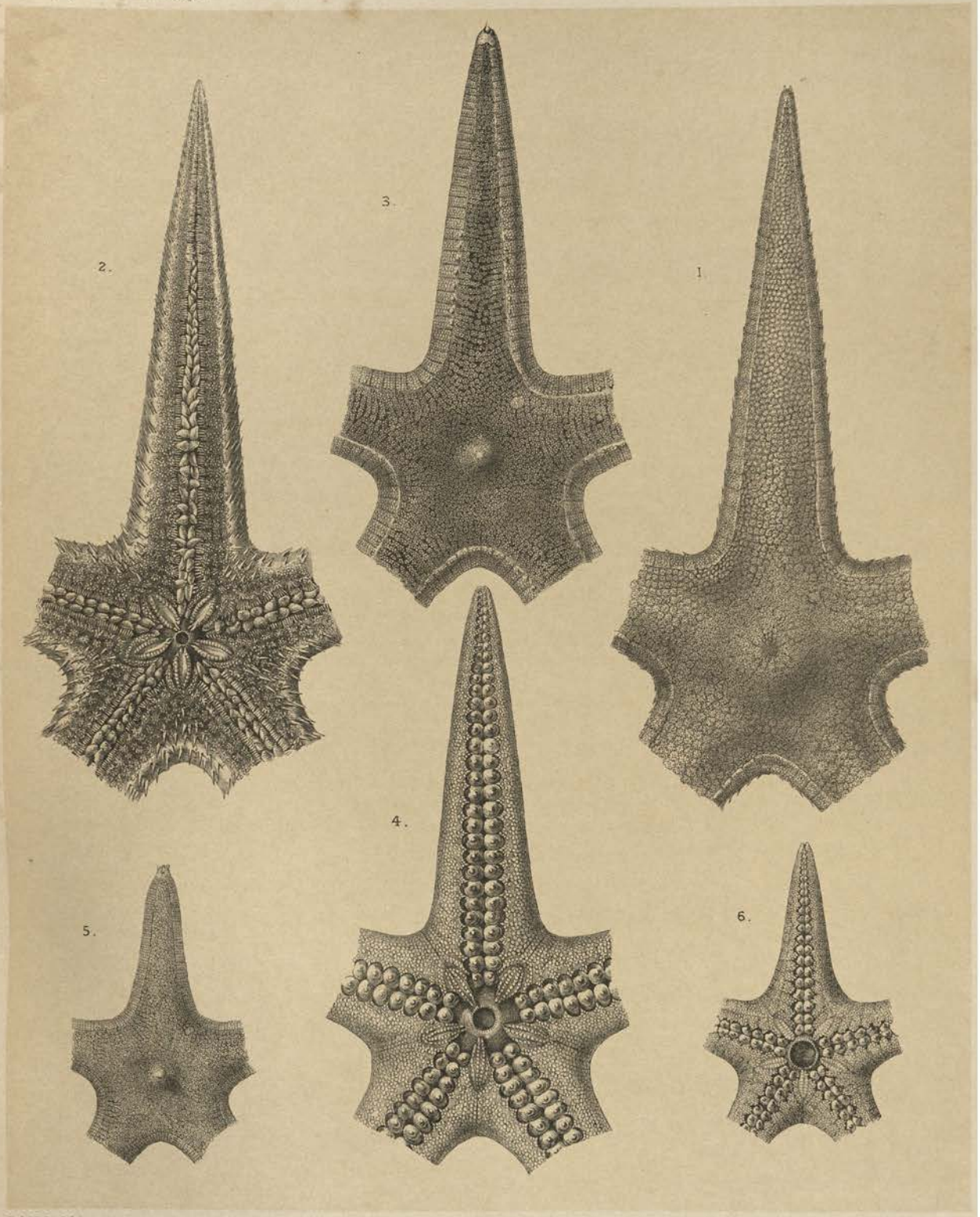
Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

Fig. 5. Abactinal aspect of a young example; magnified 3 diameters.

Fig. 6. Actinal aspect of a young example; magnified 3 diameters.

[For magnified details of this species see Pl. XV. figs. 7–11.]



F. A. Michael del.

P. Huth, Lith. Edin.

1-2. PSILASTER ACUMINATUS, n. sp. 3-6. PHOXASTER PUMILUS, n. sp.

PLATE XLI.

PLATE XLI.

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Figs. 1, 2. PSILASTER CASSIOPE, n. sp. 228

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. VII. figs. 9, 10.]

Figs. 3, 4. PSILASTER PATAGIATUS, n. sp. . . . 232

Fig. 3. Abactinal aspect; magnified 1½ diameters.

Fig. 4. Actinal aspect; magnified 1½ diameters.

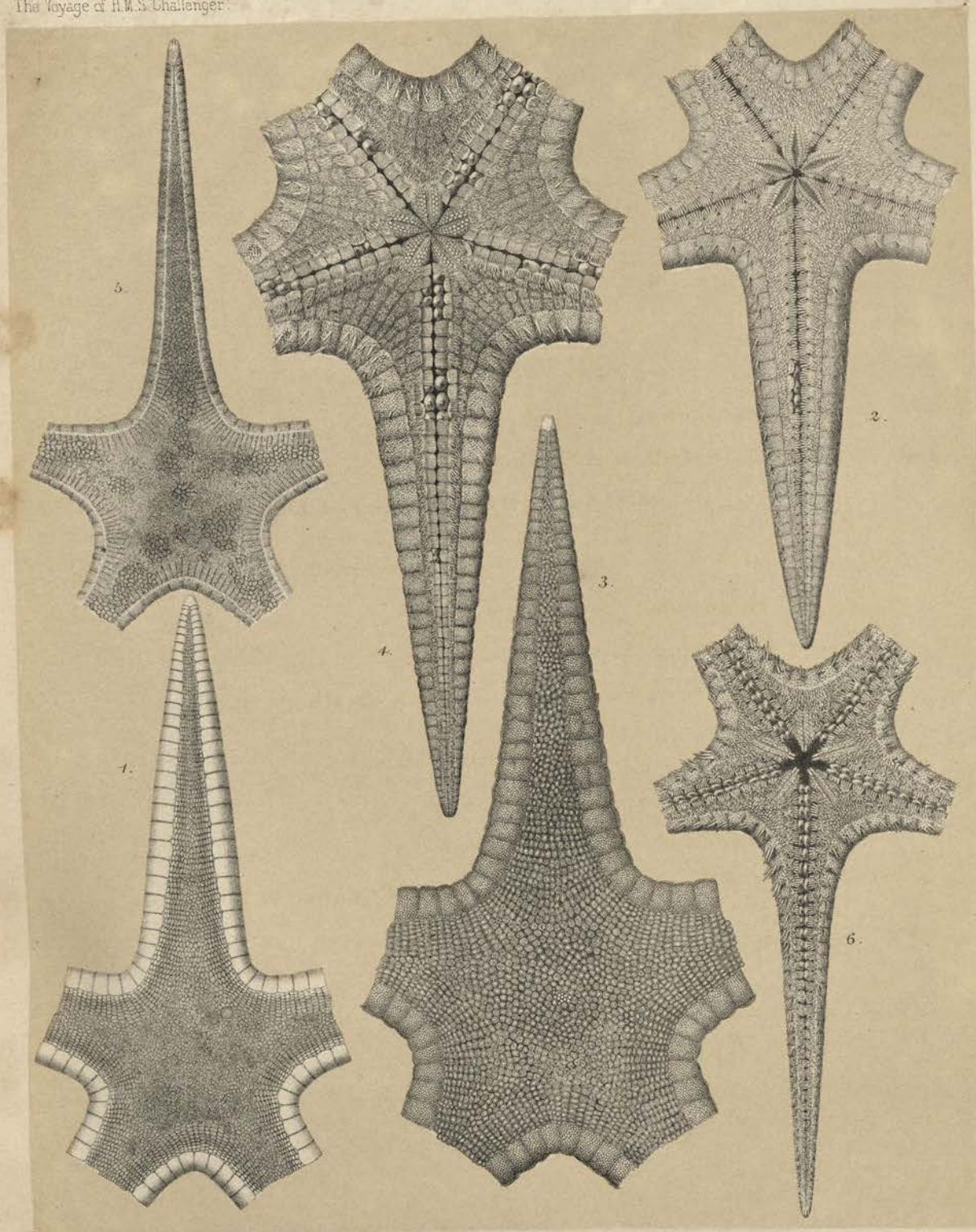
[For magnified details of this species see Pl. VII. figs. 11, 12.].

Figs. 5, 6. PSILASTER GRACILIS, n. sp. 230

Fig. 5. Abactinal aspect; magnified 1½ diameters.

Fig. 6. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XLII. figs. 9–11.]



W.H. Crowther del. Hollick lith.

Ranhart imp.

1-2. PSILASTER CASSIOPE, n. sp. 3-4. PSILASTER PATAGIATUS, n. sp.
5-6. PSILASTER GRACILIS, n. sp.

PLATE XLII.

PLATE XLII.

Page

Figs. 1, 2. BATHYBIASTER LORIPES, n. sp. . . . 240

Fig. 1. A portion of the abactinal surface; magnified 20 diameters.

Fig. 2. Adambulacral and infero-marginal plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XXXVI. figs. 1, 2.]

Figs. 3, 4. PSEUDARCHASTER DISCUS, n. sp. . . . 110

Fig. 3. A portion of the abactinal surface; magnified 20 diameters.

Fig. 4. Adambulacral and infero-marginal plates; magnified 12 diameters.

[For macroscopic figures of this species see Pl. XIX. figs. 1, 2.]

Figs. 5, 6. PSEUDARCHASTER INTERMEDIUS, n. sp. . . . 115

Fig. 5. A portion of the abactinal surface; magnified 18 diameters.

Fig. 6. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XIX. figs. 3, 4.]

Figs. 7, 8. PSILASTER ACUMINATUS, n. sp. 225

Fig. 7. A portion of the abactinal surface; magnified 18 diameters.

Fig. 8. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XL. figs. 1, 2.]

Figs. 9–11. PSILASTER GRACILIS, n. sp. 230

Fig. 9. A portion of the abactinal surface; magnified 25 diameters.

Fig. 10. Adambulacral and infero-marginal plates; magnified 15 diameters.

Fig. 11. Mouth-plates; magnified 7 diameters.

[For macroscopic figures of this species see Pl. XLI. figs. 5, 6.]

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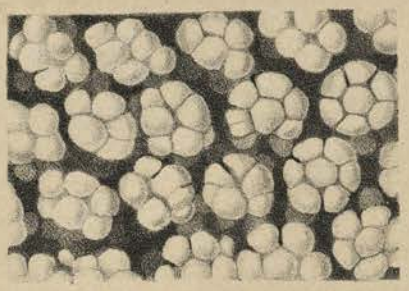

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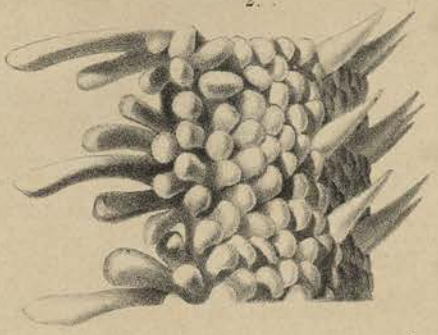

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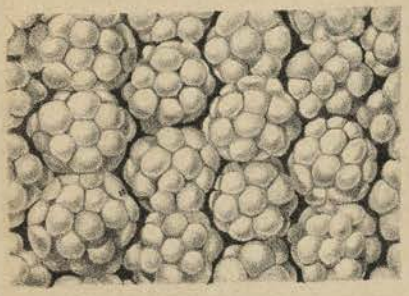

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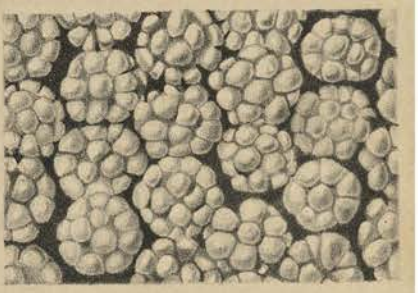

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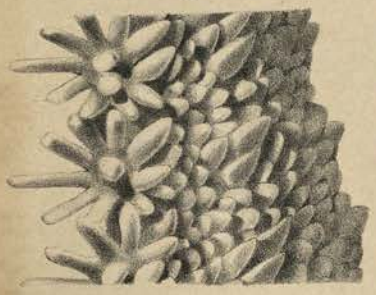

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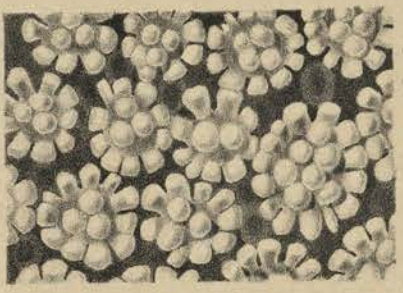

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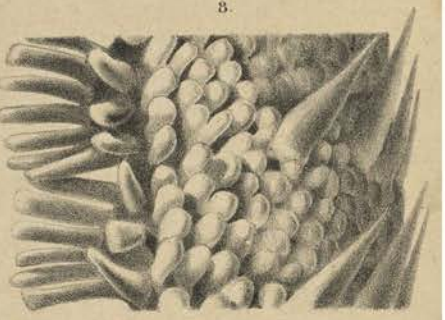

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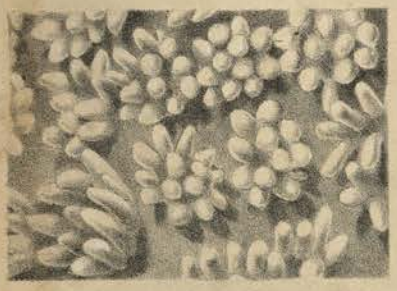

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F.H.Michael del et lith. Mintern Bros. imp

1–2. BATHYBIASTER LORIPES, n. sp. 3–4. PSEUDARCHASTER DISCUS, n. sp.
5–6. PSEUDARCHASTER INTERMEDIUS, n. sp. 7–8. PSILASTER ACUMINATUS, n. sp.
9–11. PSILASTER GRACILIS, n. sp.

PLATE XLIII.

PLATE XLIII.

Page

Figs. 1, 2. LUIDIA ASPERA, n. sp. 248

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

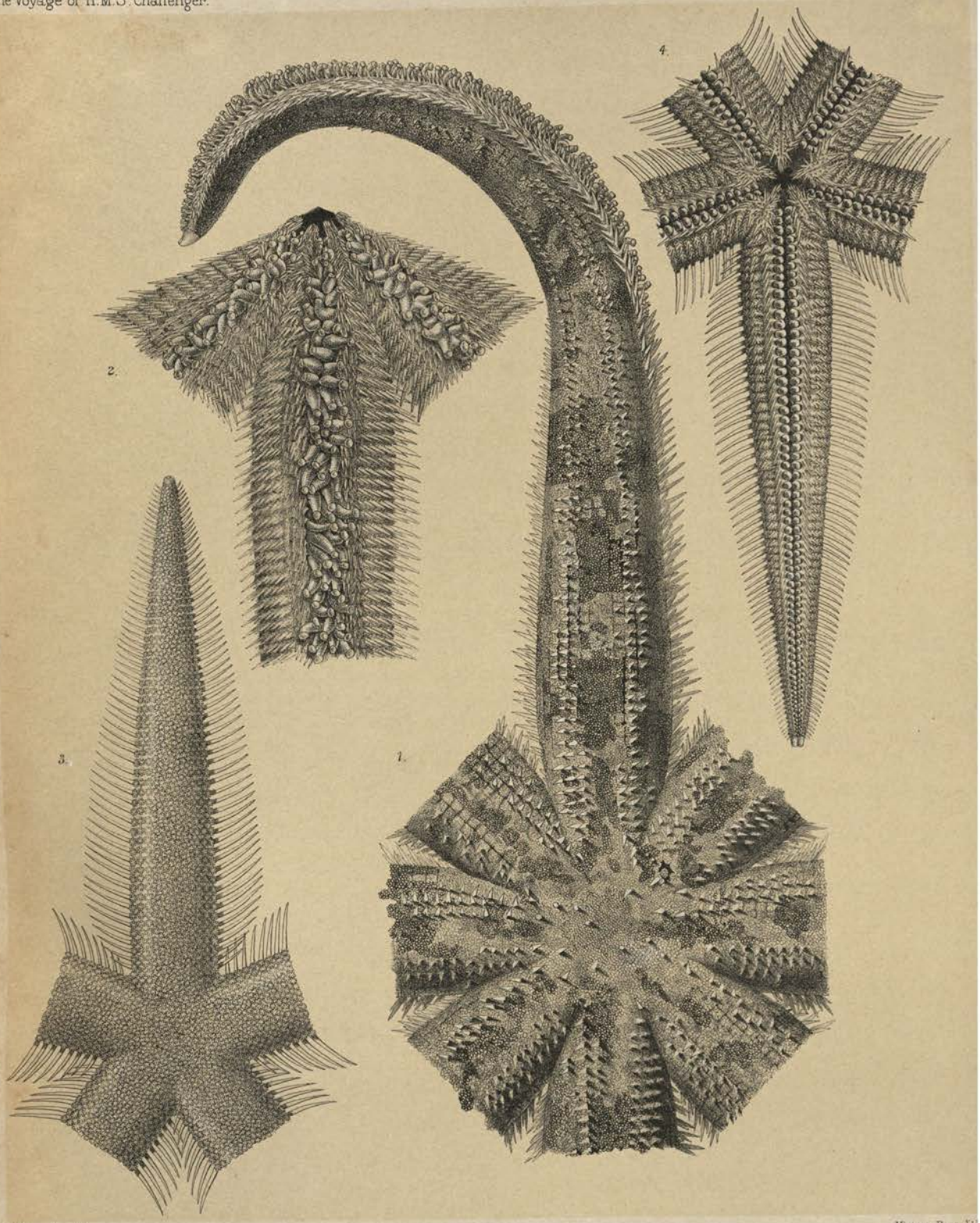
[For magnified details of this species see Pl. XLV. figs. 9, 10.]

Figs. 3, 4. LUIDIA LONGISPINA, n. sp. . . . 254

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XLV. figs. 3, 4.]



W.H. Crowther del.

Mintern Bros. lit.

1–2. LUIDIA ASPERA, n.sp. 3–4. LUIDIA LONGISPINA, n.sp.

PLATE XLIV.

PLATE XLIV.

Page

Figs. 1, 2. LUIDIA AFRICANA, n. sp. 256

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

[For magnified details of this species see Pl. XLV. figs. 1, 2.]

Figs. 3, 4. LUIDIA LIMBATA, n. sp. 251

Fig. 3. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 4. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

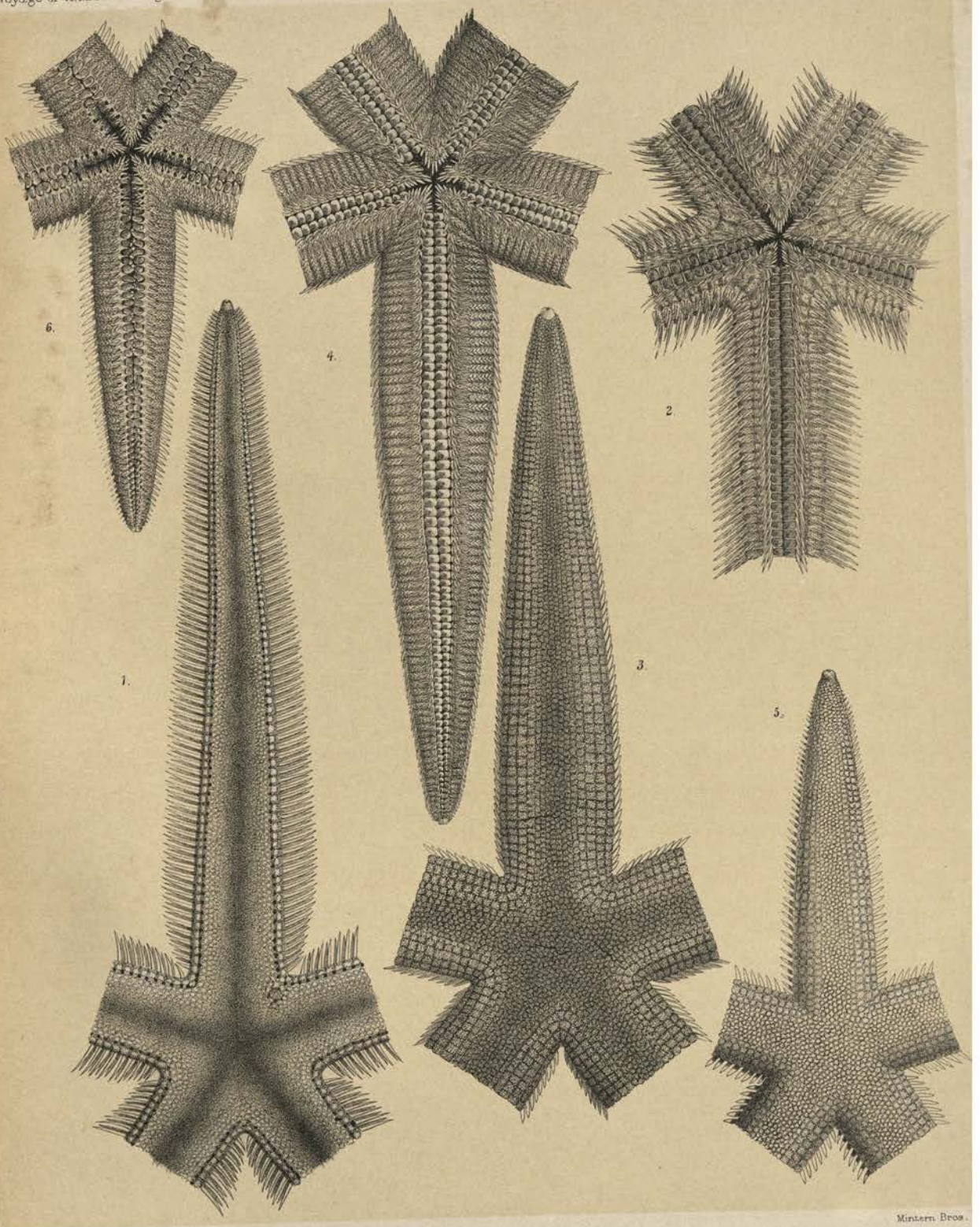
[For magnified details of this species see Pl. XLV. figs. 7, 8.]

Figs. 5, 6. LUIDIA FORFICIFER, n. sp. 258

Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. XLV. figs. 5, 6.]



W.H. Crowther del.

Mintern Bros.

1-2. LUIDIA AFRICANA, n.sp. 3-4. LUIDIA LIMBATA, n.sp.
5-6. LUIDIA FORFICIFER, n.sp.

PLATE XLV.

PLATE XLV.

Page

Figs. 1, 2. LUIDIA AFRICANA, n. sp. 256

Fig. 1. A portion of the abactinal surface; magnified 15 diameters.

Fig. 2. Adambulacral and infero-marginal plates; magnified 6 diameters.

[For macroscopic figures of this species see Pl. XLIV. figs. 1, 2.]

Figs. 3, 4. LUIDIA LONGISPINA, n. sp. 254

Fig. 3. A portion of the abactinal surface; magnified 20 diameters.

Fig. 4. Adambulacral and infero-marginal plates; magnified 10 diameters.

[For macroscopic figures of this species see Pl. XLIII. figs. 3, 4.]

Figs. 5, 6. LUIDIA FORFICIFER, n. sp. 258

Fig. 5. A portion of the abactinal surface; magnified 15 diameters.

Fig. 6. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XLIV. figs. 5, 6.]

Figs. 7, 8. LUIDIA LIMBATA, n. sp. 251

Fig. 7. A portion of the abactinal surface; magnified 15 diameters.

Fig. 8. Adambulacral and infero-marginal plates; magnified 10 diameters.

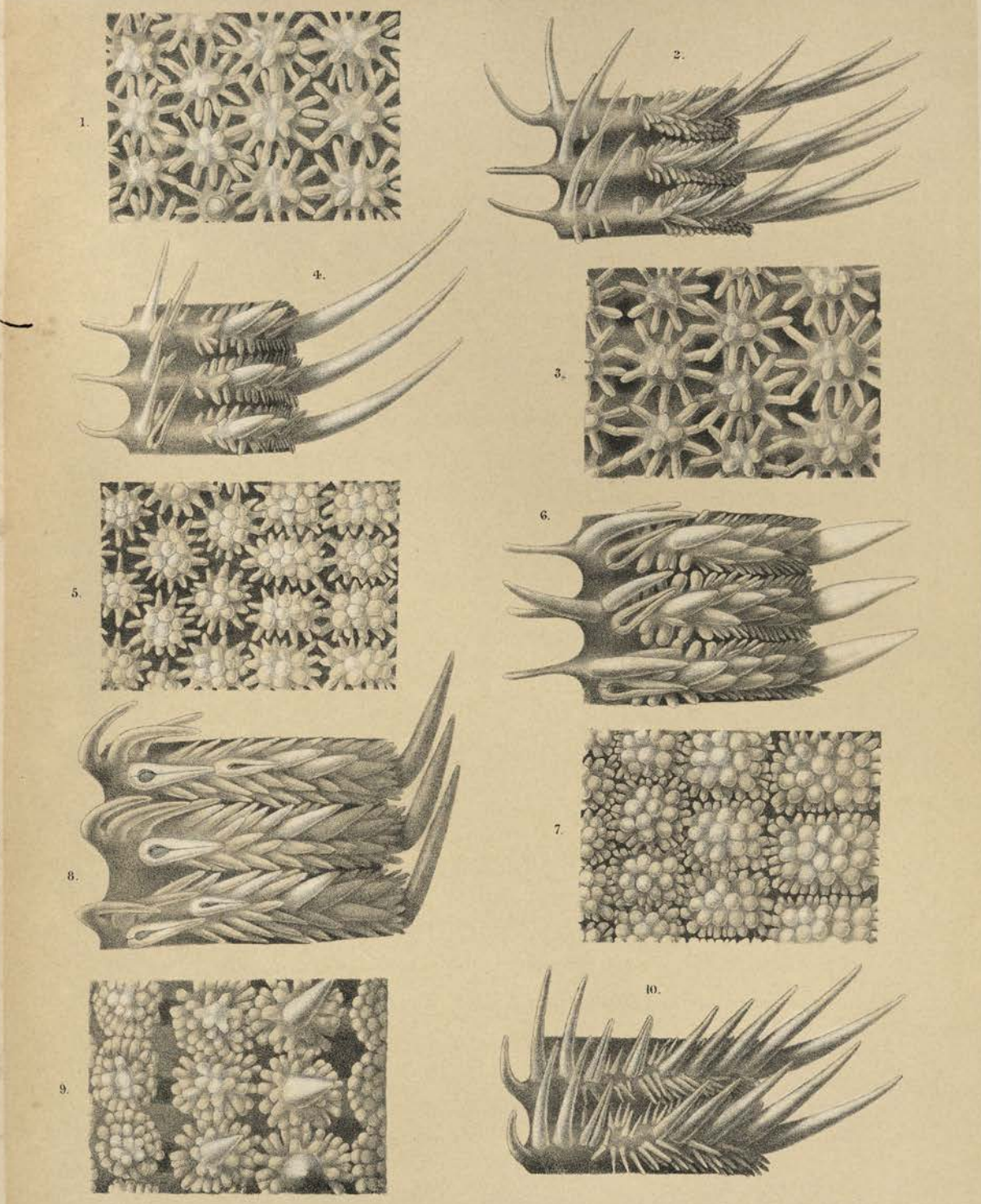
[For macroscopic figures of this species see Pl. XLIV. figs. 3, 4.]

Figs. 9, 10. LUIDIA ASPERA, n. sp. 248

Fig. 9. A portion of the abactinal surface; magnified 10 diameters.

Fig. 10. Adambulacral and infero-marginal plates; magnified 8 diameters.

[For macroscopic figures of this species see Pl. XLIII. figs. 1, 2.]



W. H. Crouther del. et lith.

Mintern Bros. imp.

1–2. LUIDIA AFRICANA, n. sp. 3–4. LUIDIA LONGISPINA, n. sp.
5–6. LUIDIA FORFICIFER, n. sp. 7–8. LUIDIA LIMBATA, n. sp.
9–10. LUIDIA ASPERA, n. sp.

PLATE XLVI.

PLATE XLVI.

Page

Figs. 1, 2. PENTAGONASTER JAPONICUS, n. sp. . . . 272

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

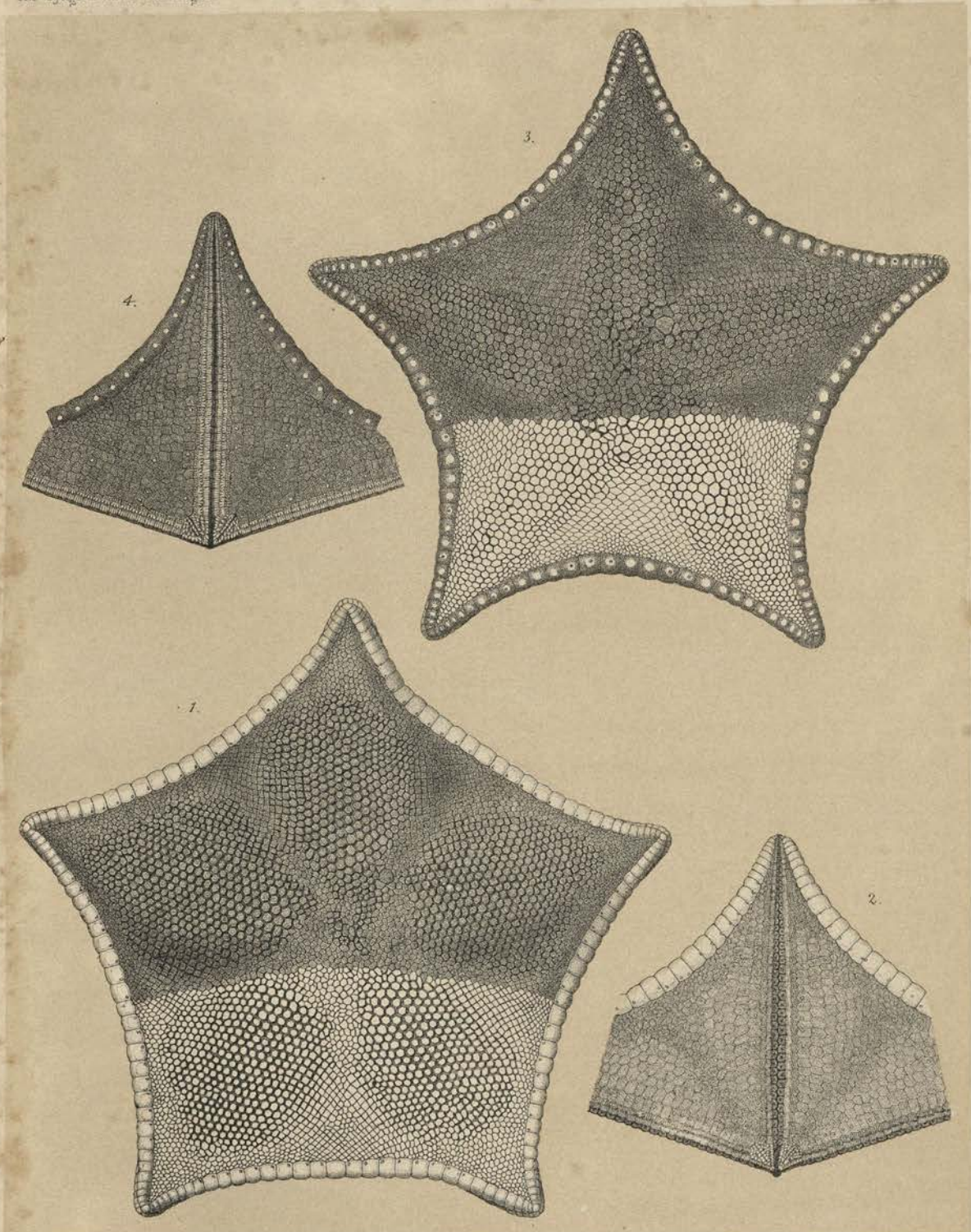
[For magnified details of this species see Pl. XLIX. figs. 1, 2.]

Figs. 3, 4. PENTAGONASTER PATAGONICUS, n. sp. . . 269

Fig. 3. Abactinal aspect; natural size.

Fig. 4. Actinal aspect; natural size.

[For magnified details of this species see Pl. XLIX. figs. 3, 4.]



W.H.Crowther del. Hollick lith.

Hanhart imp.

1-2. PENTAGONASTER JAPONICUS, n.sp. 3-4. PENTAGONASTER PATAGONICUS, n.sp.

PLATE XLVII.

PLATE XLVII.

Page

Figs. 1, 2. GNATHASTER MERIDIONALIS, Smith, sp. . . . 287

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For macroscopic figures of a young example see Pl. XLVIII. figs. 5, 6; for magnified details of the same see Pl. XLIX. figs. 11, 12.]

Figs. 3, 4. MIMASTER COGNATUS, n. sp. 336

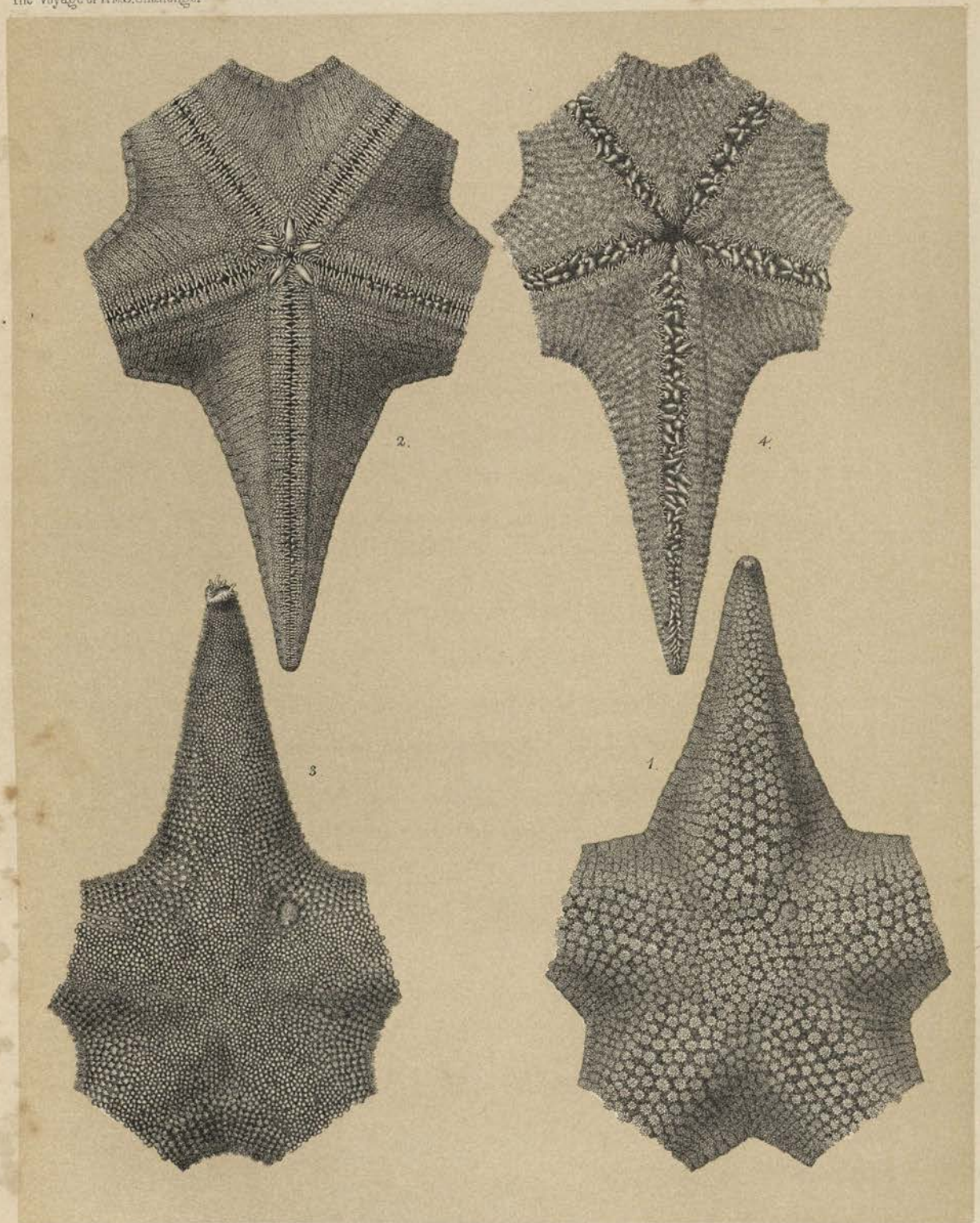
Fig. 3. Abactinal aspect; magnified 1½ diameters.

Fig. 4. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. LXII. figs. 4, 5.]

Error in the legend of the Plate:

For "n. sp." after GNATHASTER MERIDIONALIS *read* "Smith, sp."



F.H. Michael del. Hollick lith. Hanhart imp.

1-2. GNATHASTER MERIDIONALIS, n.sp. 3-4. MIMASTER COGNATUS, n. sp.

PLATE XLVIII.

PLATE XLVIII.

Page

Figs 1, 2. GNATHASTER ELONGATUS, n. sp. . . . 288

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XLIX. figs. 5–8; for macroscopic figures of a young example see Pl. XIX. figs. 5, 6.]

Figs. 3, 4. GNATHASTER ELONGATUS, n. sp. (Variety), . . 288

Fig. 3. Abactinal aspect of an attenuate variety; magnified 1½ diameters.

Fig. 4. Actinal aspect of an attenuate variety; magnified 1½ diameters.

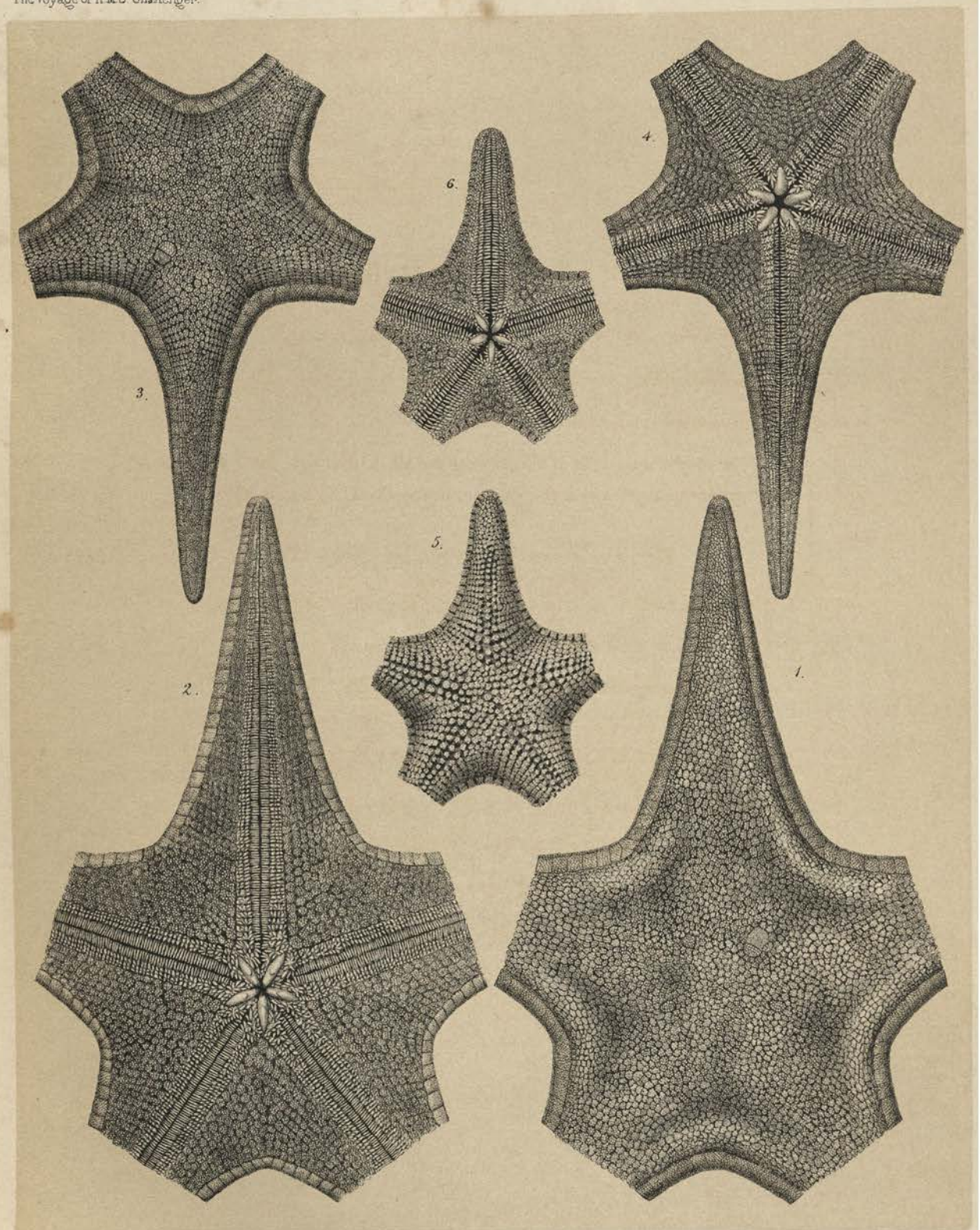
[For magnified details of this variety see Pl. XLIX. figs. 9, 10.]

Figs. 5, 6. GNATHASTER MERIDIONALIS, Smith, sp. 287

Fig. 5. Abactinal aspect of a young example; magnified 3 diameters.

Fig. 6. Actinal aspect of a young example; magnified 3 diameters.

[For magnified details of this example see Pl. XLIX. figs. 11, 12; for macroscopic figures of an adult example see Pl. XLVII. figs. 1, 2.]



W.H. Crowther del., Hollick lith.

Hanhart imp.

1-2. GNATHASTER ELONGATUS, n.sp. 3-4. GNATHASTER ELONGATUS, n.sp. (Var)

5-6. GNATHASTER MERIDIONALIS, Smith, sp. (juv.).

PLATE XLIX.

PLATE XLIX.

Page

Figs. 1, 2. PENTAGONASTER JAPONICUS, n. sp. . . . 272

Fig. 1. A portion of the abactinal surface; magnified 8 diameters.

Fig. 2. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. XLVI. figs. 1, 2.]

Figs. 3, 4. PENTAGONASTER PATAGONICUS, n. sp. . . . 269

Fig. 3. A portion of the abactinal surface; magnified 10 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. XLVI. figs. 3, 4.]

Figs. 5, 6. GNATHASTER ELONGATUS, n. sp. . . . 288

Fig. 5. A portion of the abactinal surface of a young example; magnified 20 diameters.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface of a young example; magnified 15 diameters.

[For macroscopic figures of this example see Pl. XIX. figs. 5, 6.]

Figs. 7, 8. GNATHASTER ELONGATUS, n. sp. . . . 288

Fig. 7. A portion of the abactinal surface; magnified 12 diameters.

Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. XLVIII. figs. 1, 2.]

Figs. 9, 10. GNATHASTER ELONGATUS, n. sp. (Variety), . . . 288

Fig. 9. A portion of the abactinal surface; magnified 20 diameters.

Fig. 10. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

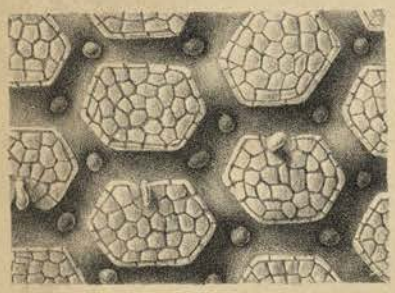
[For macroscopic figures of this variety see Pl. XLVIII. figs. 3, 4.]

Figs. 11, 12. GNATHASTER MERIDIONALIS, Smith, sp. . . 287

Fig. 11. A portion of the abactinal surface of a young example; magnified 20 diameters.

Fig 12. Adambulacral plates and adjacent portion of the actinal surface of a young example; magnified 30 diameters.

[For macroscopic figures of this example see Pl. XLVIII. figs. 5, 6; for those of an adult example see Pl. XLVII. figs. 1, 2.]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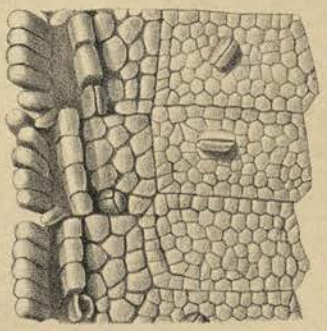
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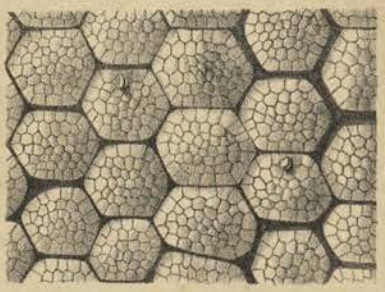
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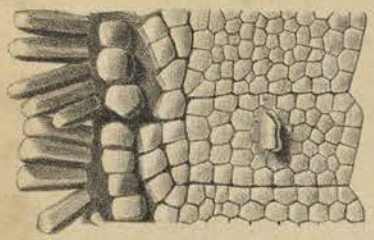
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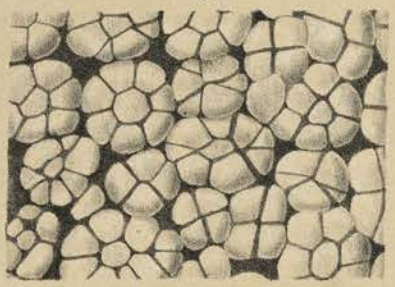
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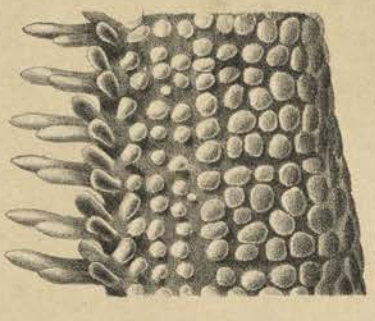
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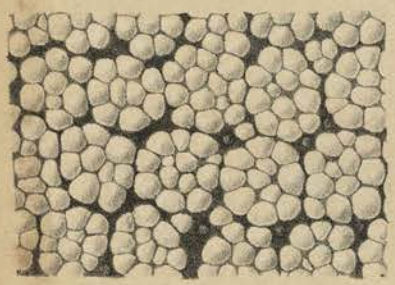
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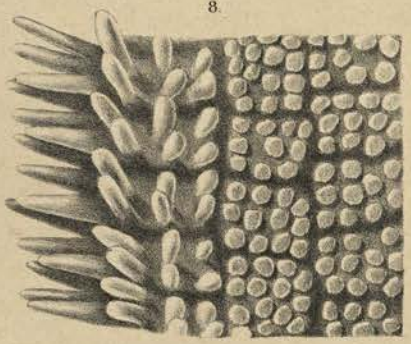
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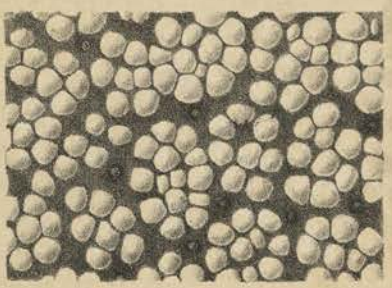
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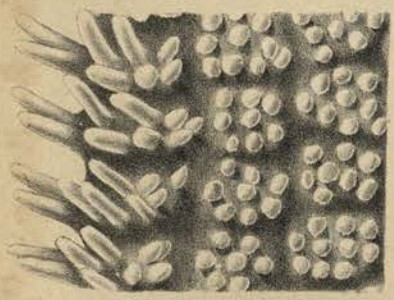
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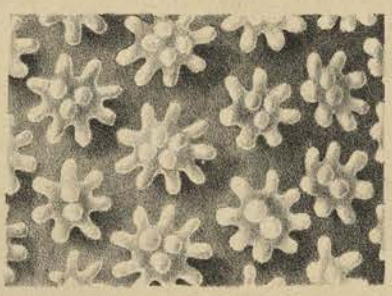
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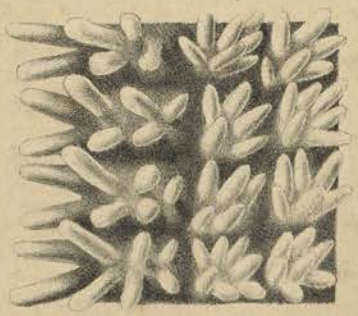
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W.H. Crowther del et lith. Mintern Bros. imp.

1–2. PENTAGONASTER JAPONICUS, n.sp.
3–4. PENTAGONASTER PATAGONICUS, n.sp.
5–6. GNATHASTER ELONGATUS, n.sp., (juv.).
7–8. GNATHASTER ELONGATUS, n.sp.
9–10. GNATHASTER ELONGATUS, n.sp., (var.).
11–12. GNATHASTER MERIDIONALIS, Smith, sp. (juv.).

PLATE L.

PLATE L.

Page

Figs. 1, 2. NYMPHASTER SYMBOLICUS, n. sp. . . . 297

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

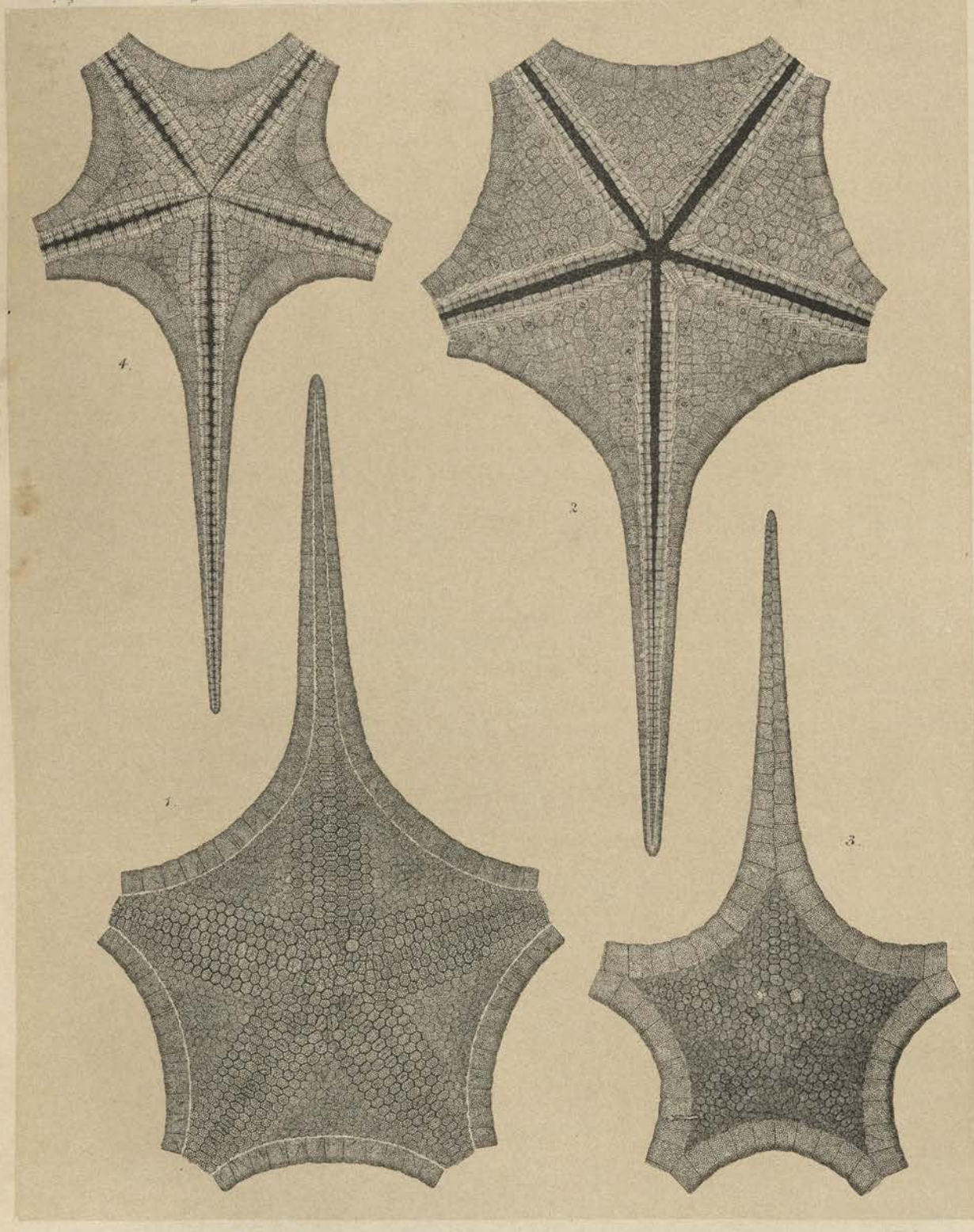
[For magnified details of this species see Pl. LIII. figs. 7, 8.]

Figs. 3, 4. NYMPHASTER PROTENTUS, n. sp. . . . 303

Fig. 3. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 4. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

[For magnified details of this species see Pl. LIII. figs. 9, 10.]



W.H. Crowther del. Hollick lith.

Hanhart imp.

1-2. NYMPHASTER SYMBOLICUS, n.sp. 3-4. NYMPHASTER PROTENTUS, n.sp.

PLATE LI.

PLATE LI.

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Figs. 1, 2. NYMPHASTER ALBIDUS, n. sp. 306

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. LIII. figs. 5, 6.]

Figs. 3, 4. PARAGONASTER CYLINDRATUS, n. sp. 314

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

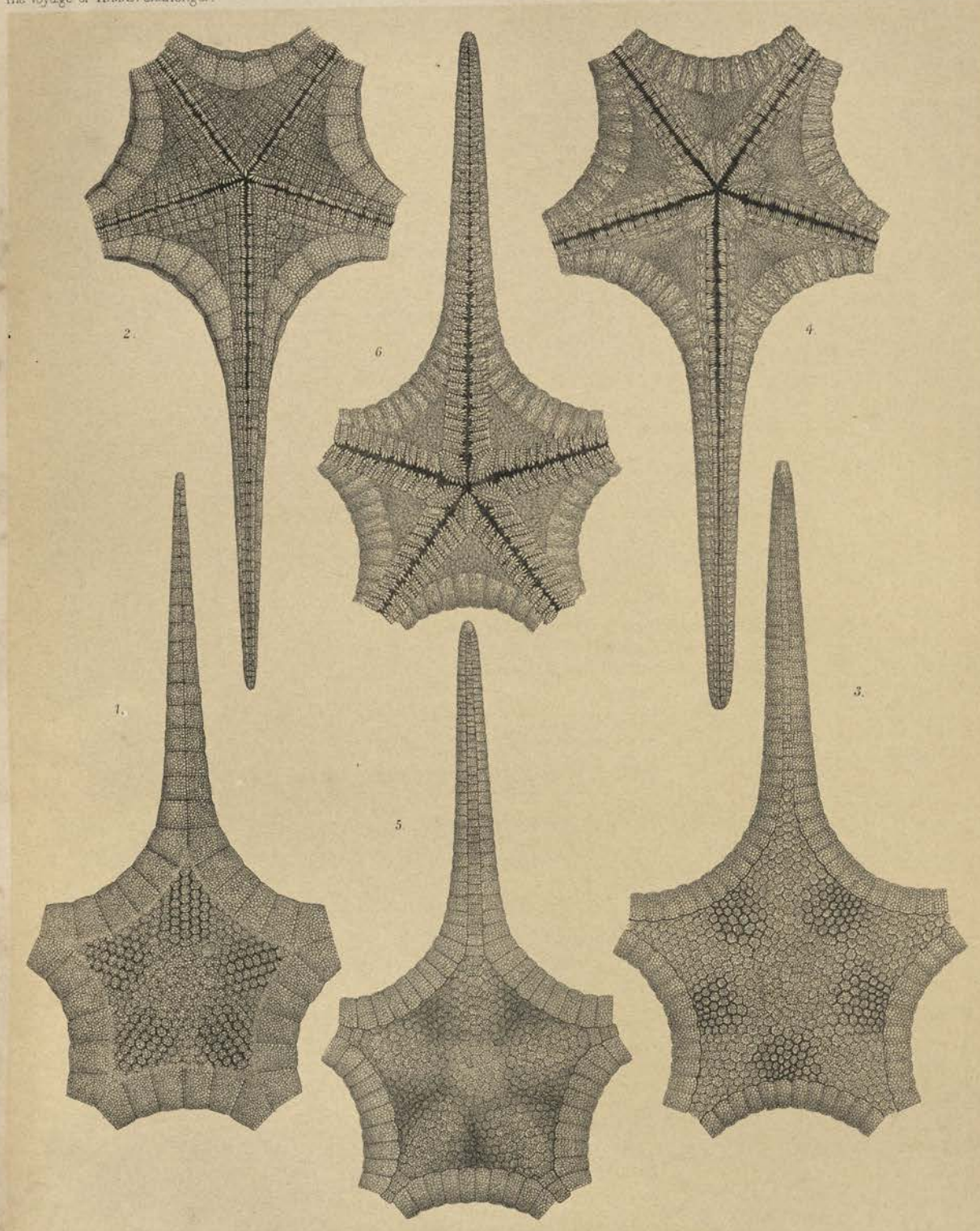
[For magnified details of this species see Pl. LIII. figs. 3, 4.]

Figs. 5. 6. PARAGONASTER CTENIPES, n. sp. 311

Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. LIII. figs. 1, 2.]



W.H. Crowther del.

Mintern Bros. lith.

1-2. NYMPHASTER ALBIDUS, n.sp. 3-4. PARAGONASTER CYLINDRATUS, n.sp.
5-6. PARAGONASTER CTENIPES, n.sp.

PLATE LII.

PLATE LII.

Page

Figs. 1, 2. PENTAGONASTER ARCUATUS, n. sp. . . . 277

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

[For magnified details of this species see Pl. XVIII. figs. 5, 6.]

Figs. 3, 4. NYMPHASTER BIPUNCTUS, n. sp. . . . 301

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. LIII. figs. 11, 12.]

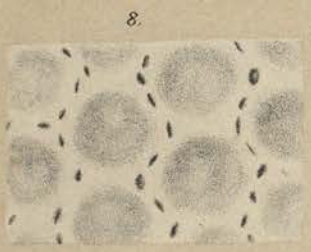
Figs. 5–8. GYMNASTERIA CARINIFERA (Lamarck), von Martens, . 357

Fig. 5. Abactinal aspect of a young example; magnified 2 diameters.

Fig. 6. Actinal aspect of a young example; magnified 2 diameters.

Fig. 7. Adambulacral plates and adjacent portion of the actinal surface of the same example; magnified 10 diameters.

Fig. 8. A portion of the abactinal surface of the same; magnified 10 diameters.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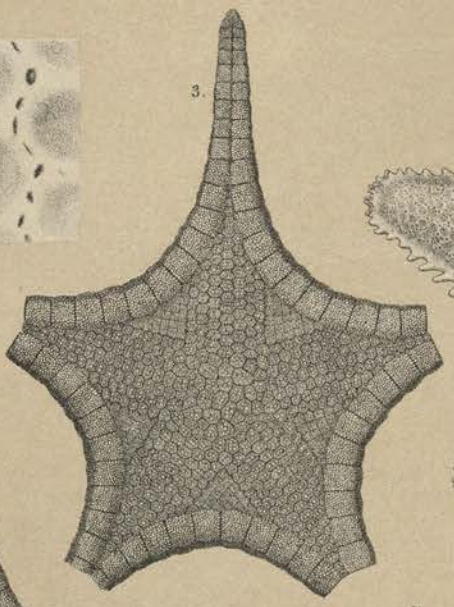
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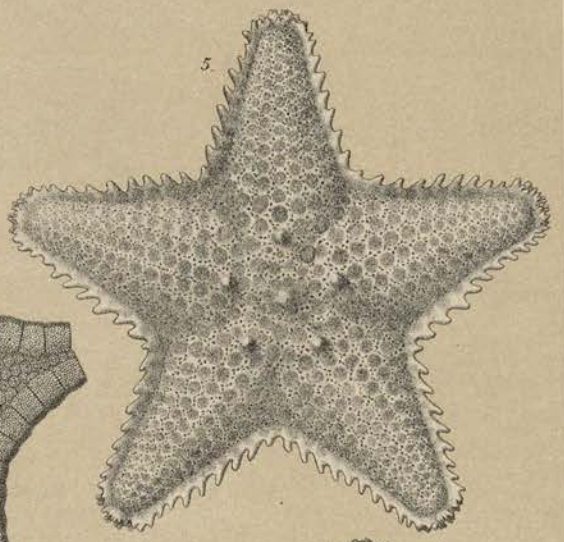
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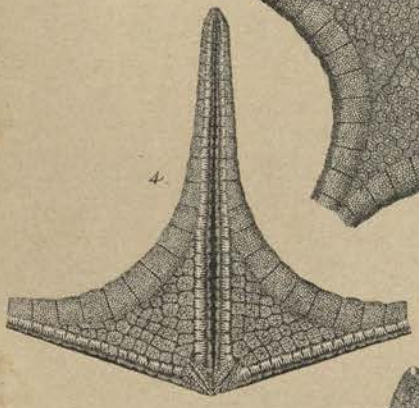
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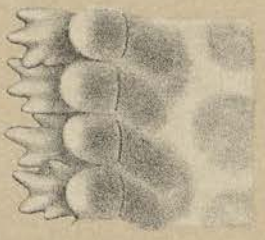
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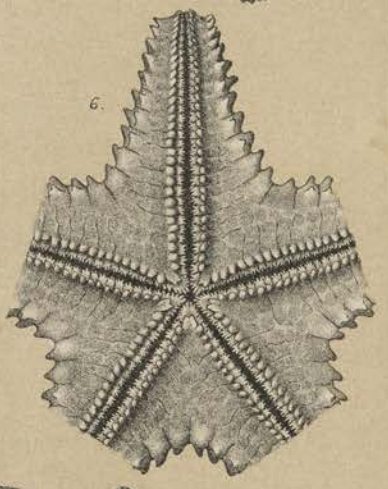
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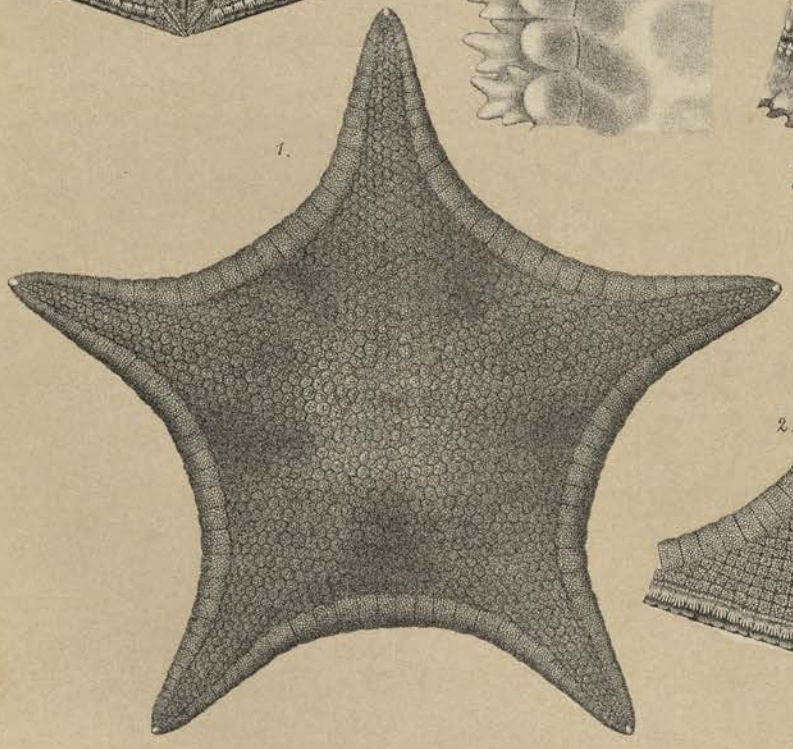
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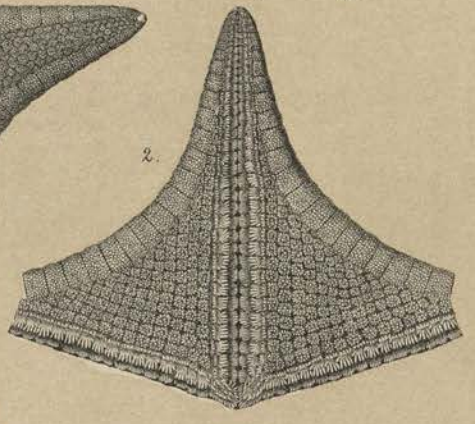
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W.H. Crowther del. Hollick lith. Hanhart imp.

1–2. PENTAGONASTER ARCUATUS, n. sp. 3–4. NYMPHASTER BIPUNCTUS, n. sp.
5–8. GYMNASTERIA CARINIFERA (Lamarck), V. Martens. (juv).

PLATE LIII.

PLATE LIII.

Page

Figs. 1, 2. PARAGONASTER CTENIPES, n. sp. . . . 311

Fig. 1. A portion of the abactinal surface; magnified 15 diameters.

Fig. 2. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. LI. figs. 5, 6.]

Figs. 3, 4. PARAGONASTER CYLINDRATUS, n. sp. . . . 314

Fig. 3. A portion of the abactinal surface; magnified 12 diameters.

Fig. 4. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. LI. figs. 3, 4.]

Figs. 5, 6. NYMPHASTER ALBIDUS, n. sp. 306

Fig. 5. A portion of the abactinal surface; magnified 20 diameters.

Fig. 6. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. LI. figs. 1, 2.]

Figs. 7, 8. NYMPHASTER SYMBOLICUS, n. sp. . . . 297

Fig. 7. A portion of the abactinal surface; magnified 10 diameters.

Fig. 8. Adambulacral and infero-marginal plates; magnified 15 diameters.

[For macroscopic figures of this species see Pl. L. figs. 1, 2.]

Figs. 9, 10. NYMPHASTER PROTENTUS, n. sp. . . . 303

Fig. 9. A portion of the abactinal surface; magnified 12 diameters.

Fig. 10. Adambulacral and infero-marginal plates; magnified 12 diameters.

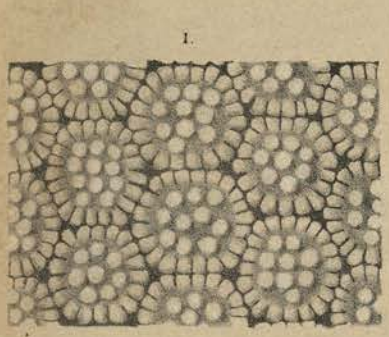
[For macroscopic figures of this species see Pl. L. figs. 3, 4.]

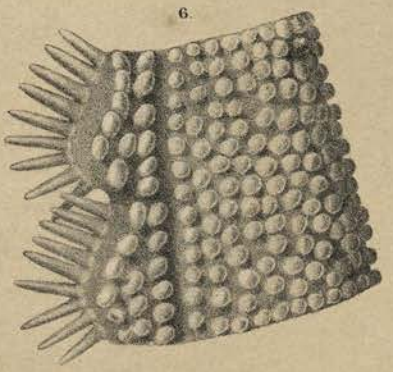
Figs. 11, 12. NYMPHASTER BIPUNCTUS, n. sp. . . . 301

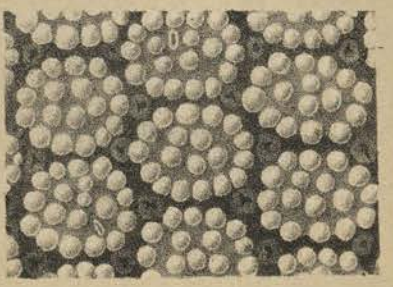
Fig. 11. A portion of the abactinal surface; magnified 15 diameters.

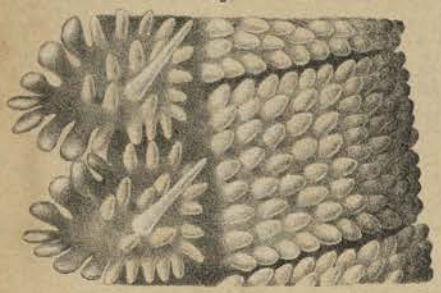
Fig. 12. Adambulacral and infero-marginal plates; magnified 20 diameters.

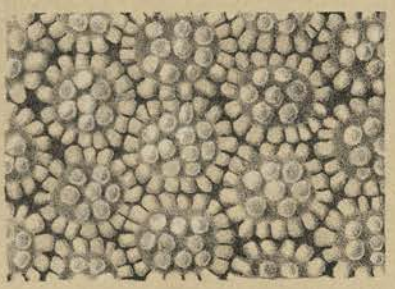
[For macroscopic figures of this species see Pl. LII. figs. 3, 4.]

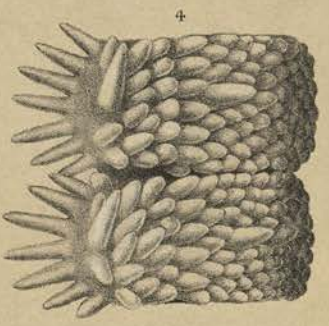


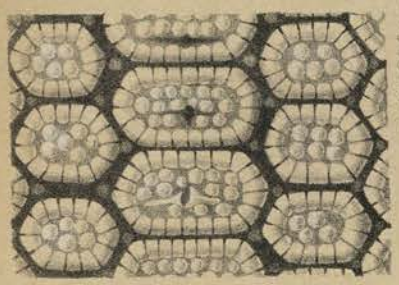


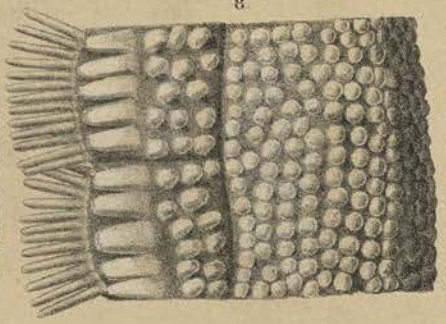


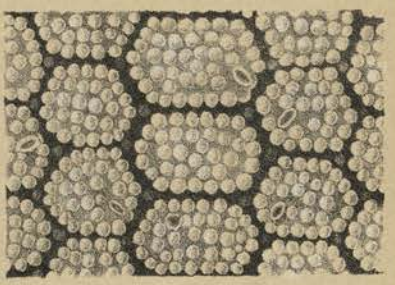


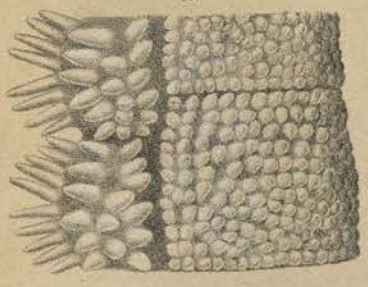


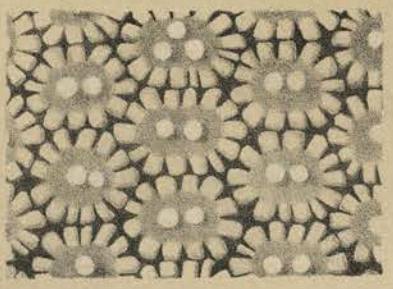


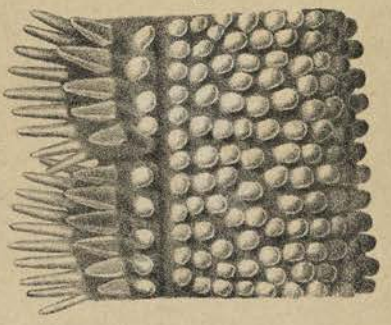












W. H. Crowther del. et lith.

Mintern Bros. imp.

1–2. PARAGONASTER CTENIPES, n. sp.
3–4. PARAGONASTER CYLINDRATUS, n. sp.
9–10. NYMPHASTER PROTENTUS, n. sp.
5–6. NYMPHASTER ALBIDUS, n. sp.
7–8. NYMPHASTER SYMBOLICUS, n. sp.
11–12. NYMPHASTER BIPUNCTUS, n. sp.

PLATE LIV.

PLATE LIV.

Page

Figs. 1–7. LEPTOGONASTER CRISTATUS, n. sp. 327

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

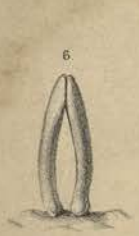
Fig. 3. A portion of the abactinal surface; magnified 15 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

Fig. 5. The extremity of a ray; magnified.

Fig. 6. One of the pincer-shaped pedicellariæ on the abactinal surface, seen in profile; magnified.

Fig. 7. One of the tubercle-like valvate pedicellariæ on the plates adjacent to the adambulacral plates, seen in profile; magnified.



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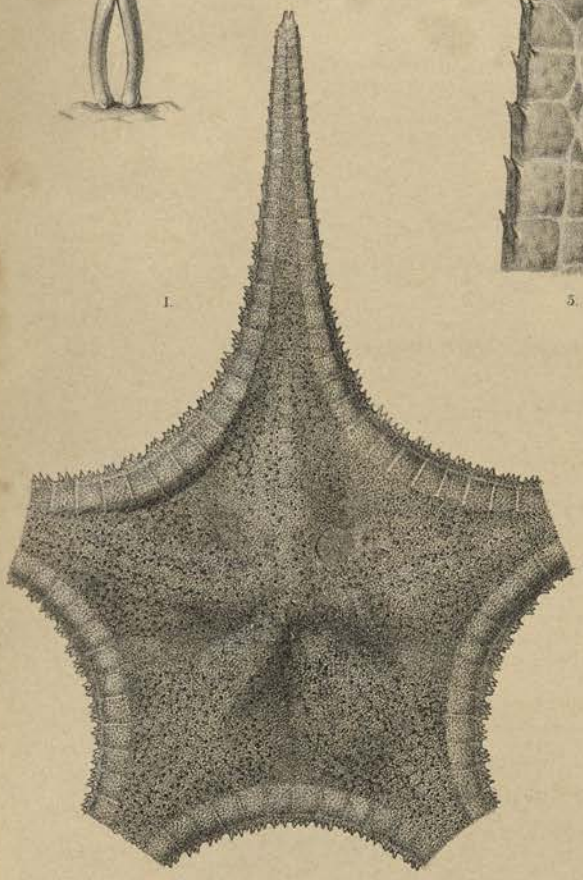

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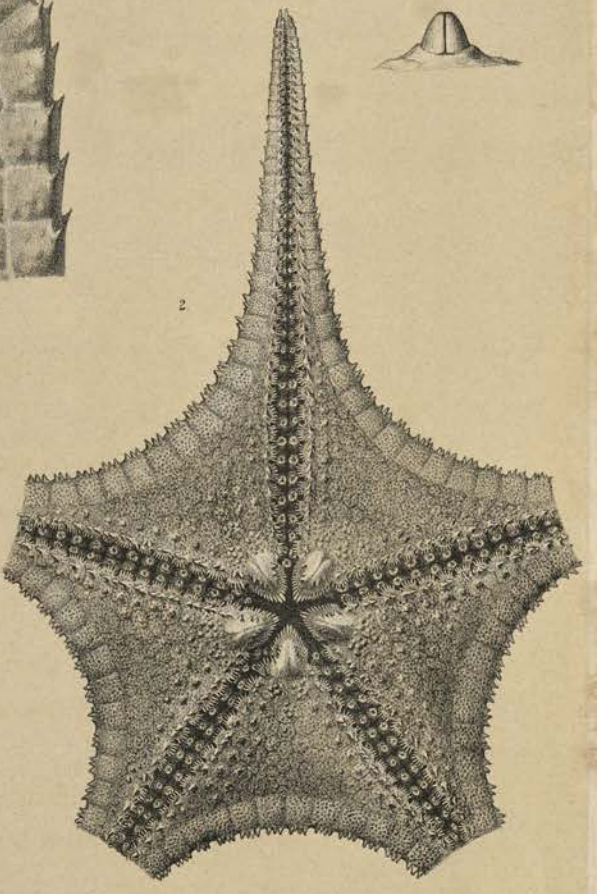

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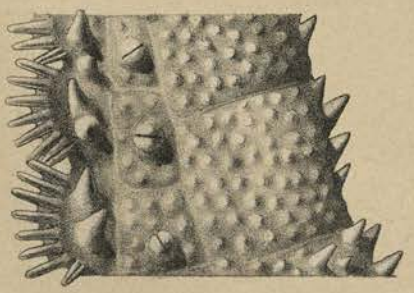

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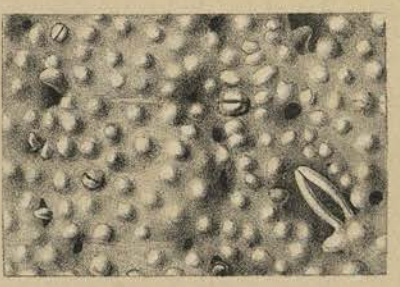

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LEPTOGONASTER CRISTATUS, n. sp.

PLATE LV.

PLATE LV.

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Figs. 1–7. NECTRIA OCELLIFERA (Lamarck), Gray, . . 319

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

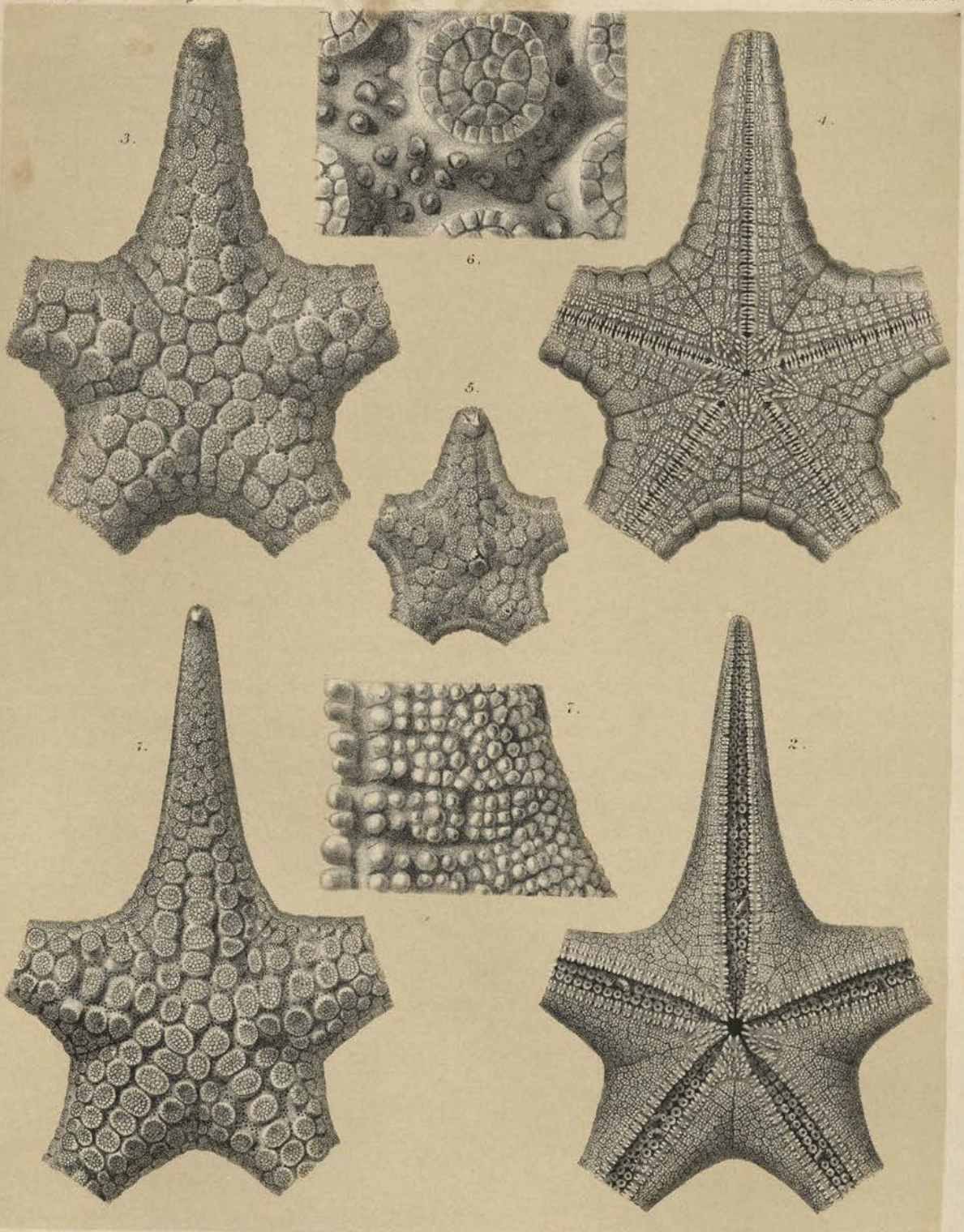
Fig. 3. Abactinal aspect of a younger example; magnified 3 diameters.

Fig. 4. Actinal aspect of the same; magnified 3 diameters.

Fig. 5. Abactinal aspect of a young example; magnified 3 diameters.

Fig. 6. A portion of the abactinal surface of the adult; magnified 9 diameters.

Fig. 7. Adambulacral plates and adjacent portion of the actinal surface; magnified 9 diameters.



F.H. Michael del. Hollick lith.

Hanhart imp.

NECTRIA OCELLIFERA (Lamarck), Gray.

PLATE LVI.

PLATE LVI.

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Figs. 1–4. CALLIASTER BACCATUS, n. sp. . . . 280

Fig. 1. Actinal aspect, magnified 1½ diameters.

Fig. 2. Abactinal aspect, magnified 1½ diameters.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 12 diameters.

Fig. 4. A portion of the abactinal surface; magnified 12 diameters.

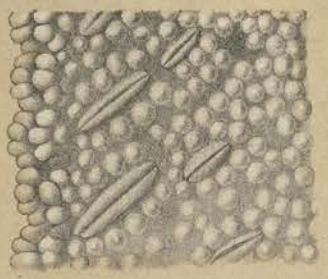
Figs. 5–8. ANTHENEA TUBERCULOSA, Gray (?), . . . 340

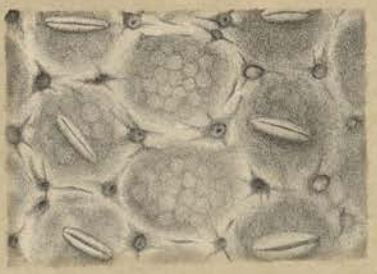
Fig. 5. Abactinal aspect of a young example; magnified 3 diameters.

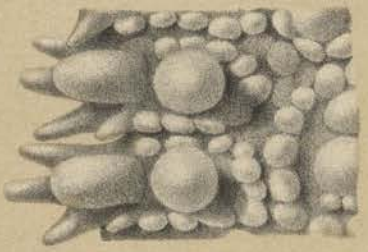
Fig. 6. Actinal aspect of a young example; magnified 3 diameters.

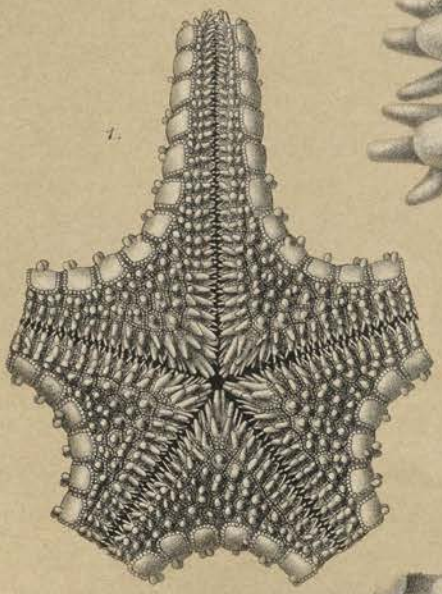
Fig. 7. Adambulacral plates and adjacent portion of the actinal surface; magnified 20 diameters.

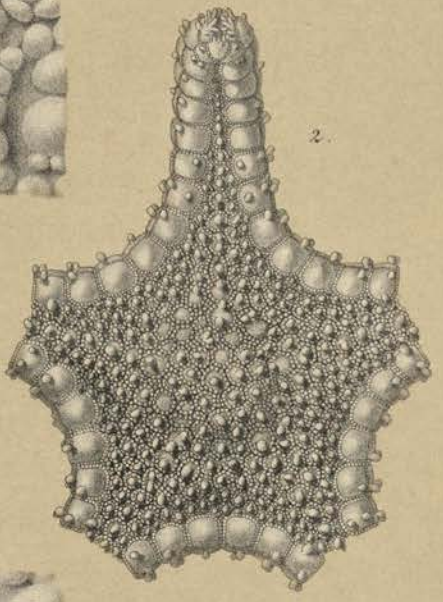
Fig. 8. A portion of the abactinal surface; magnified 15 diameters.

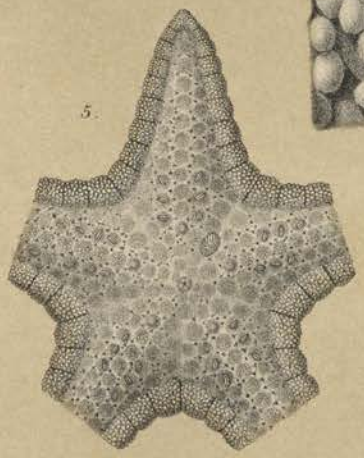


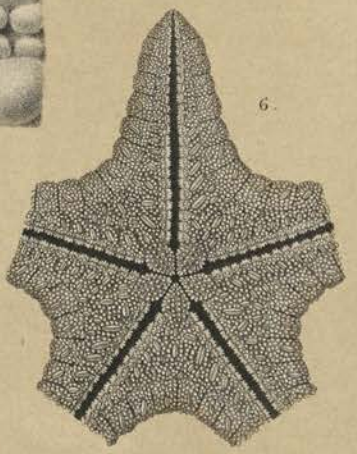












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Kanhart imp.

1-4. CALLIASTER BACCATUS, n. sp.

5-8. ANTHENEA TUBERCULOSA, Gray, (?), (juv.)

PLATE LVII.

PLATE LVII.

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Figs. 1–4. PENTAGONASTER LEPIDUS, n. sp. 275

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

Fig. 3. A portion of the abactinal surface; magnified 25 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 35 diameters.

Figs. 5–7. GNATHASTER PILULATUS, n. sp. 292

Fig. 5. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

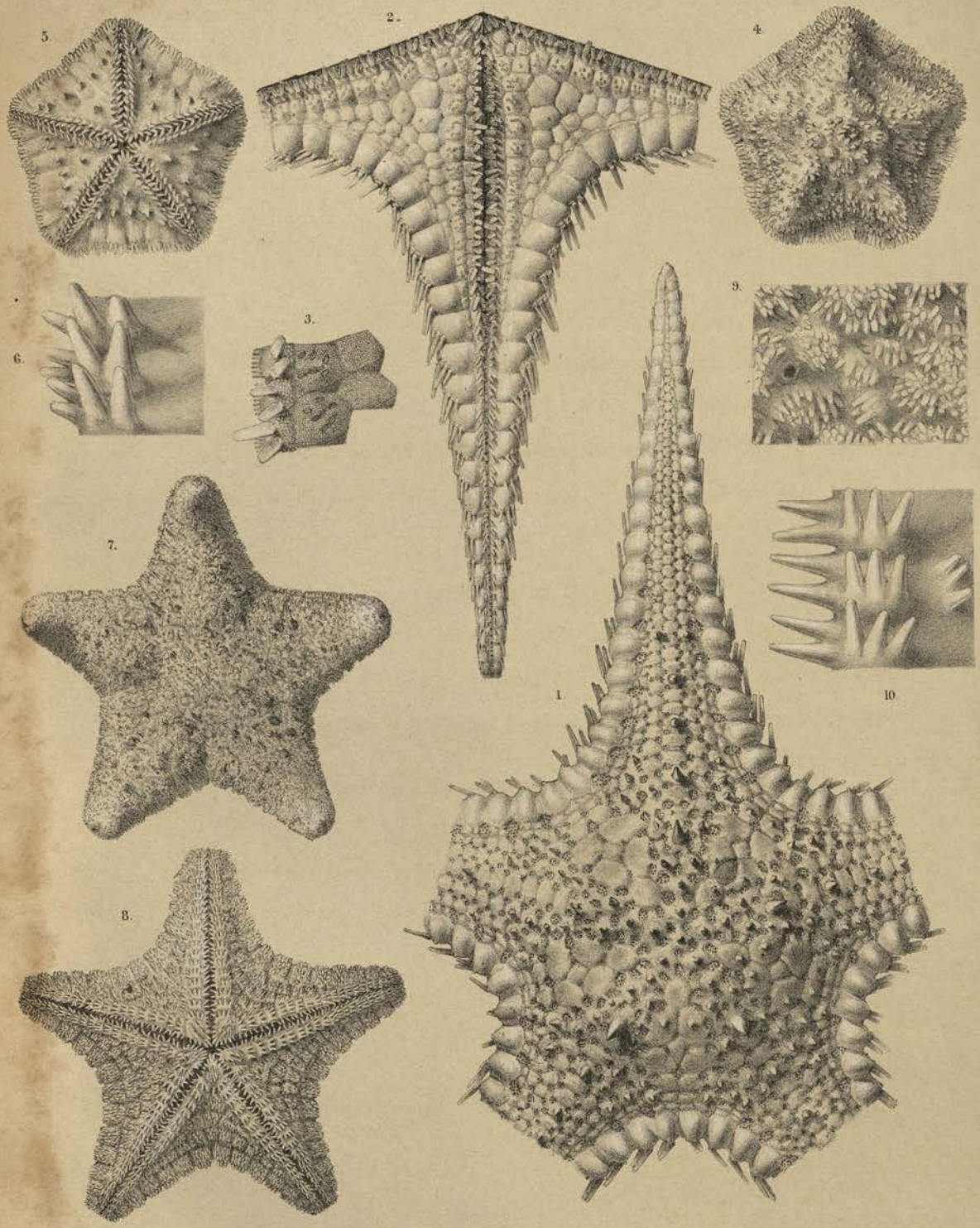
Fig. 6. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 7. A portion of the abactinal surface; magnified 10 diameters.

Figs. 8, 9. NYMPHASTER BASILICUS, n. sp. 308

Fig. 8. Abactinal aspect; natural size.

Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.



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1–3. STELLASTER PRINCEPS n.sp. 4–6. MARGINASTER FIMBRIATUS, n.sp.

7–10, LASIASTER VILLOSUS, n.sp.

PLATE LVIII.

PLATE LVIII.

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Figs. 1 3. STELLASTER PRINCEPS, n. sp. 323

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified.

Figs. 4–6. MARGINASTER FIMBRIATUS, n. sp. 365

Fig. 4. Abactinal aspect; magnified 4 diameters.

Fig. 5. Actinal aspect; magnified 4 diameters.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 24 diameters.

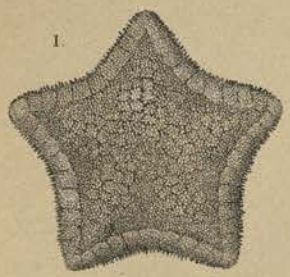
Figs. 7–10. LASIASTER VILLOSUS, n. sp. 372

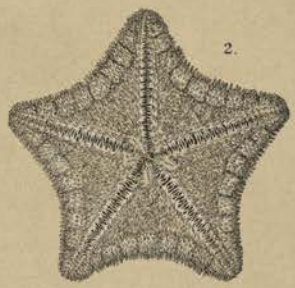
Fig. 7. Abactinal aspect; magnified 4 diameters.

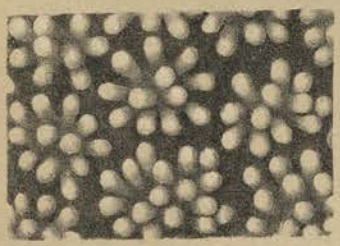
Fig. 8. Actinal aspect; magnified 4 diameters.

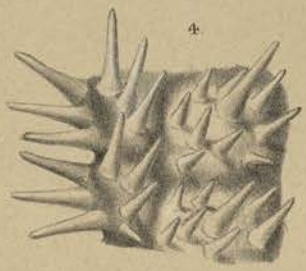
Fig. 9. A portion of the abactinal surface; magnified 15 diameters.

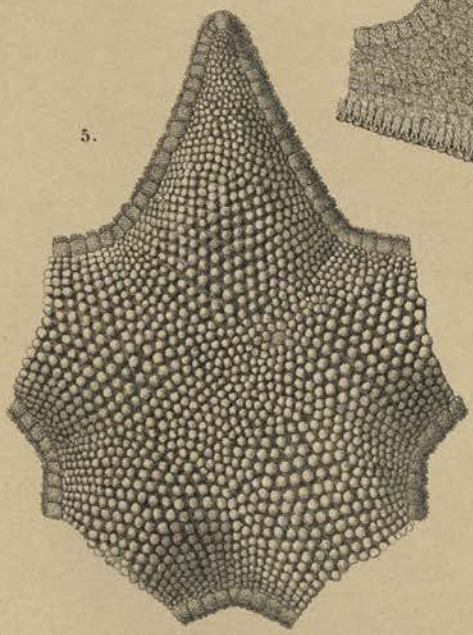
Fig. 10. Adambulacral plates and adjacent portion of the actinal surface; magnified 20 diameters.

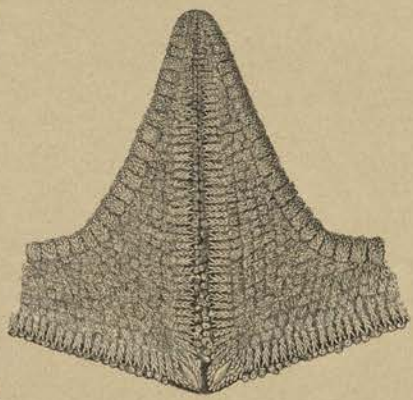


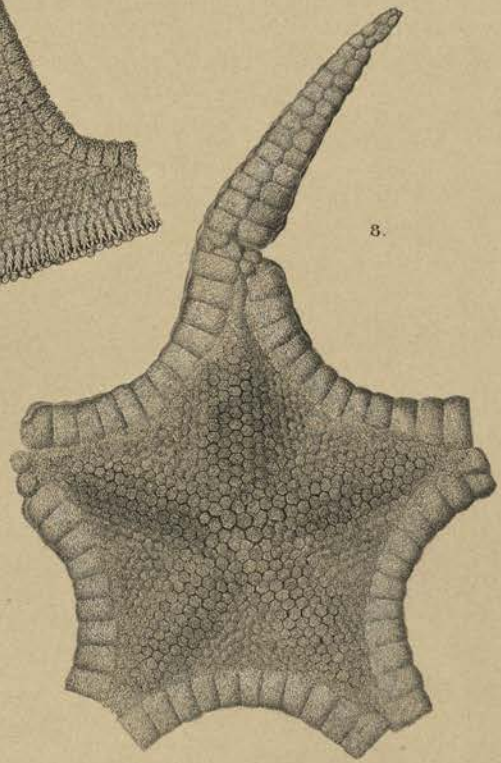












W.H. Crowther del. et lith.

Mintern Bros. imp.

1–4. PENTAGONASTER LEPIDUS, n.sp. 5–7. GNATHASTER PILULATUS, n.sp.

8–9. NYMPHASTER BASILICUS, n.sp.

PLATE LIX.

PLATE LIX.

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Figs. 1, 2. PORANIA GLABER, n. sp. 360

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

Fig. 3. PORANIA ANTARCTICA, Smith, ... 360

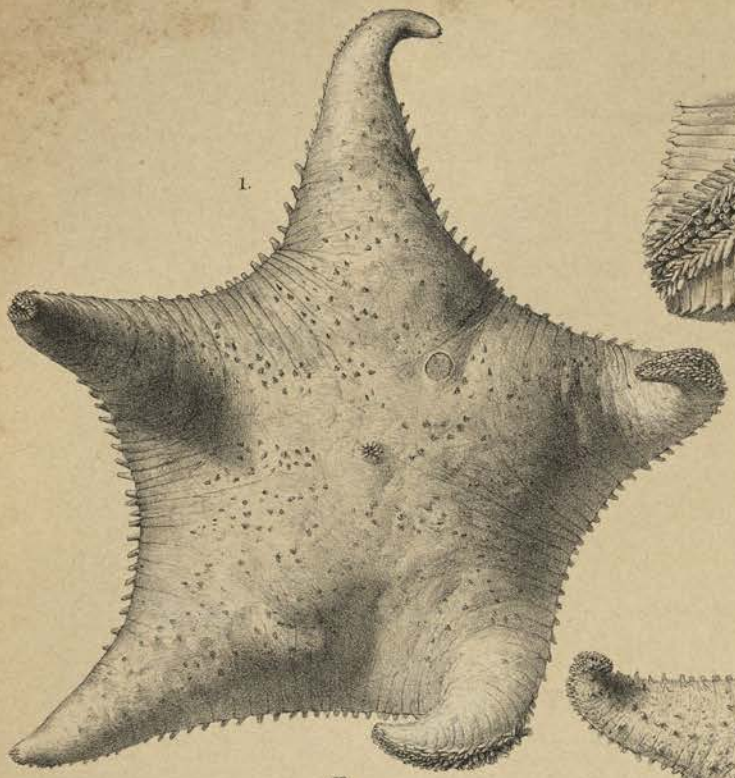
Fig. 3. Abactinal aspect; natural size.

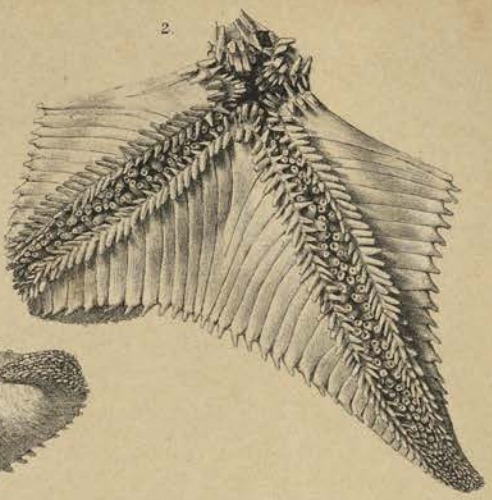
Fig. 4. PORANIA SPICULATA, n. sp. 362

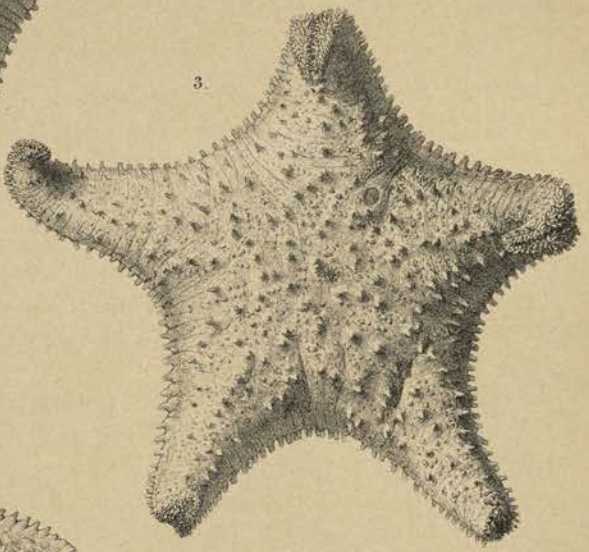
Fig. 4. Abactinal aspect; natural size.

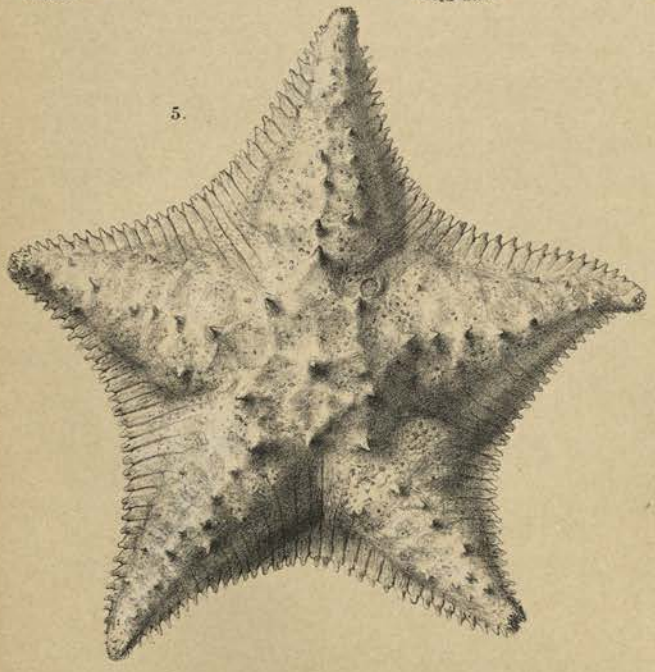
Fig. 5. PORANIA MAGELLANICA, Studer, ... 363

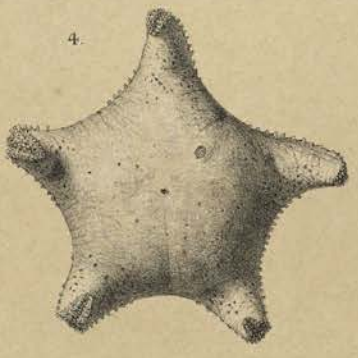
Fig. 5. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.











F. H. Michael del. et lith.

Mintern Bros. imp.

1–2. PORANIA GLABER, n. sp.
3. PORANIA ANTARCTICA, Smith.
4. PORANIA SPICULATA, n. sp.
5. PORANIA MAGELLANICA, Studer.

PLATE LX.

PLATE LX.

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Figs. 1, 2. GANERIA FALKLANDICA, Gray, ... 383

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

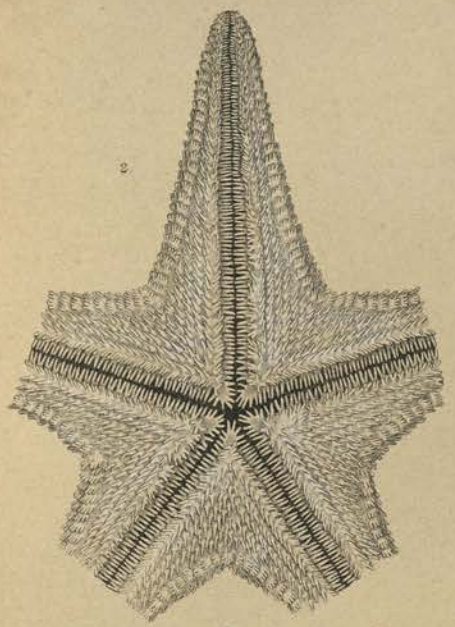
[For magnified details of this species see Pl. LXII. figs. 6, 7.]

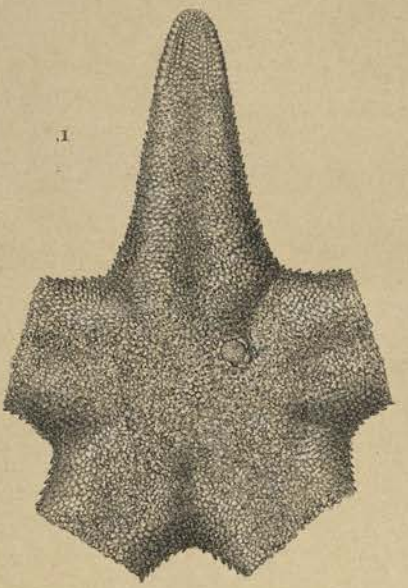
Figs. 3, 4. CYCETHRA ELECTILIS, n. sp. 377

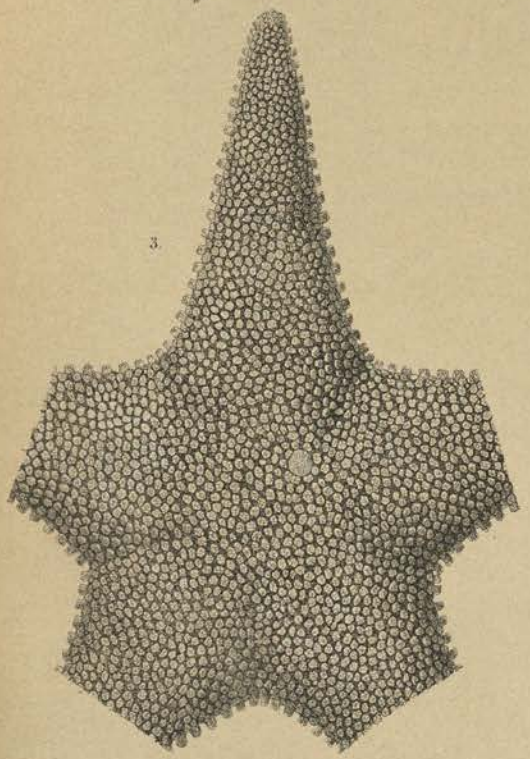
Fig. 3. Abactinal aspect; magnified 2 diameters.

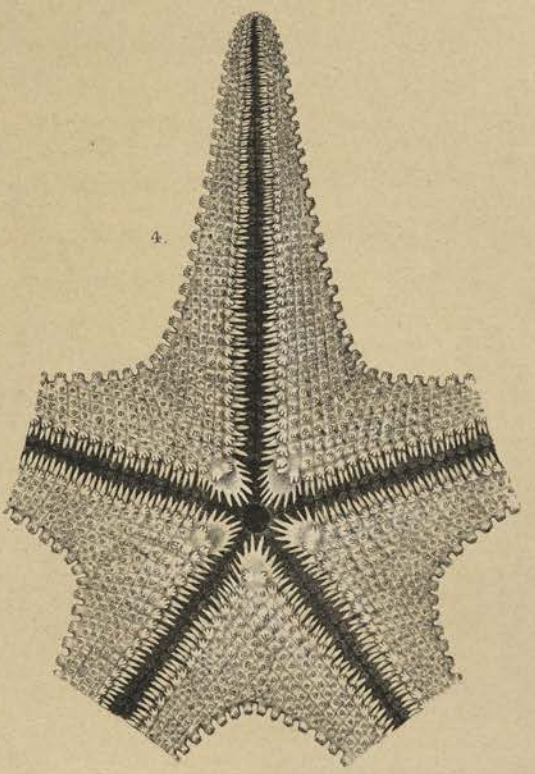
Fig. 4. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. LXII. figs. 2, 3.]









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1–2. GANERIA FALKLANDICA, Gray. 3–4. CYCETHRA ELECTILIS, n. sp.

PLATE LXI.

PLATE LXI.

Page

Figs. 1, 2. CYCETHRA PINGUIS, n. sp. 380

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

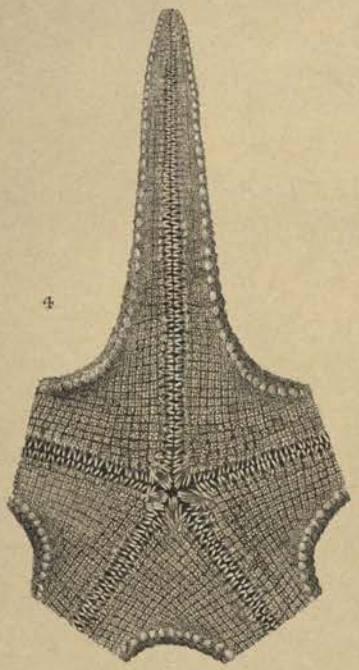
[For magnified details of this species see Pl. LXII. figs. 8, 9.]

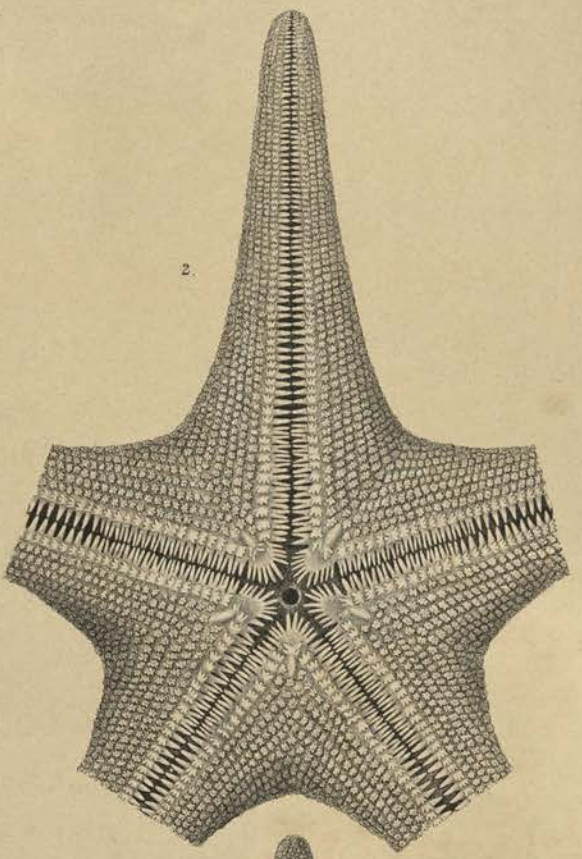
Figs. 3, 4. CYCETHRA NITIDA, n. sp. 379

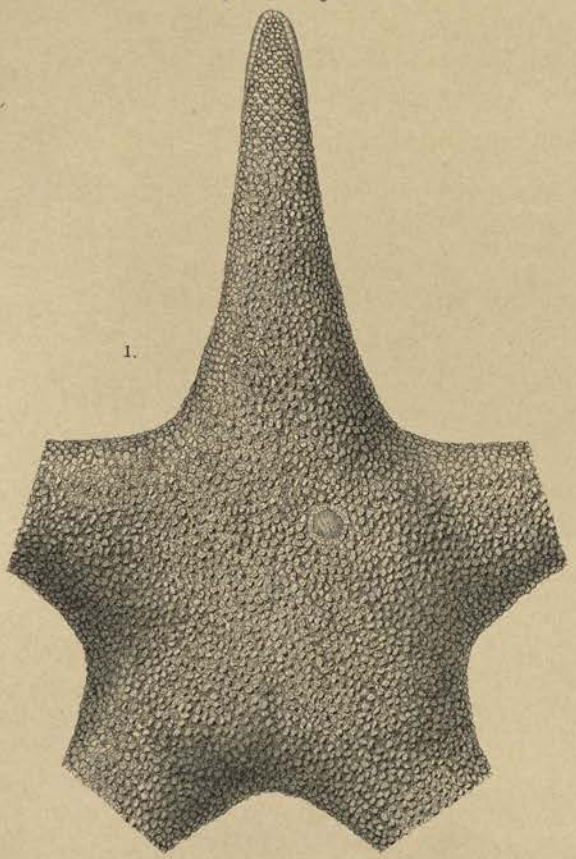
Fig. 3. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

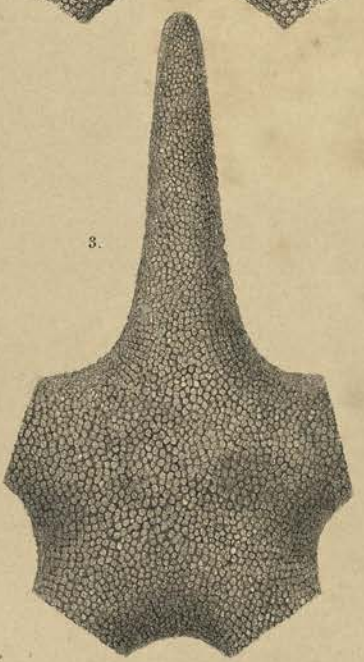
Fig. 4. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

[For magnified details of this species see Pl. LXII. figs. 10, 11.]









W. H. Crowther del. et lith. Mintern Bros. imp.

1–2. CYCETHRA PINGUIS, n.sp. 3–4 CYCETHRA NITIDA, n.sp.

PLATE LXII.

PLATE LXII.

Page

Fig. 1. PERKNASTER FUSCUS, n. sp. 551

Fig. 1. A portion of the abactinal surface; magnified 22 diameters.

[For macroscopic figures of this species see Pl. XCVII. figs. 3, 4.]

Figs. 2, 3. CYCETHRA ELECTILIS, n. sp. 377

Fig. 2. A portion of the abactinal surface; magnified 15 diameters.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. LX. figs. 3, 4.]

Figs. 4, 5. MIMASTER COGNATUS, n. sp. 336

Fig. 4. A portion of the abactinal surface; magnified 24 diameters.

Fig. 5. Adambulacral plates and adjacent portion of the actinal surface; magnified 16 diameters.

[For macroscopic figures of this species see Pl. XLVII. figs. 3, 4.]

Figs. 6, 7. GANERIA FALKLANDICA, Gray, . . . 383

Fig. 6. A portion of the abactinal surface; magnified 10 diameters.

Fig. 7. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. LX. figs. 1, 2.]

Figs. 8, 9. CYCETHRA PINGUIS, n. sp. 380

Fig. 8. A portion of the abactinal surface; magnified 10 diameters.

Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 6 diameters.

[For macroscopic figures of this species see Pl. LXI. figs. 1, 2.]

Figs. 10, 11. CYCETHRA NITIDA, n. sp. 379

Fig. 10. A portion of the abactinal surface; magnified 20 diameters.

Fig. 11. Adambulacral plates and adjacent portion of the actinal surface; magnified 12 diameters.

[For macroscopic figures of this species see Pl. LXI. figs. 3, 4.]

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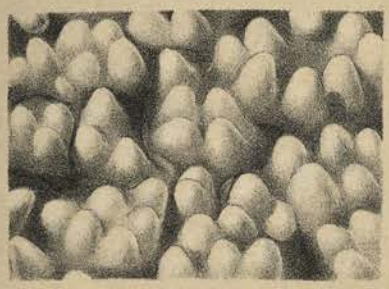

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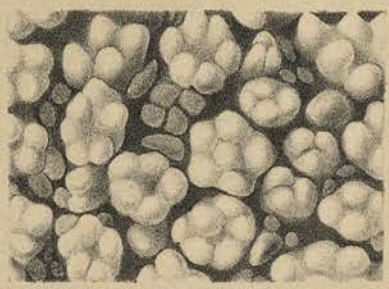

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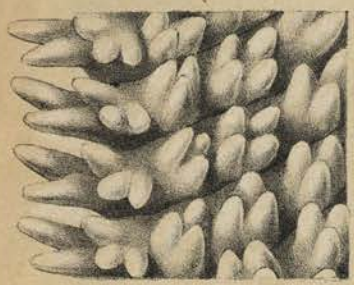

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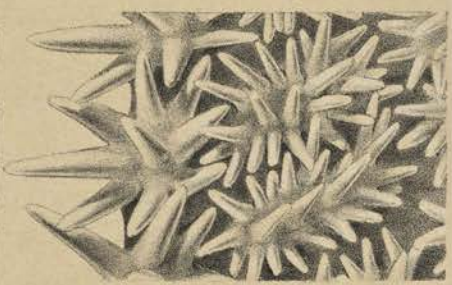

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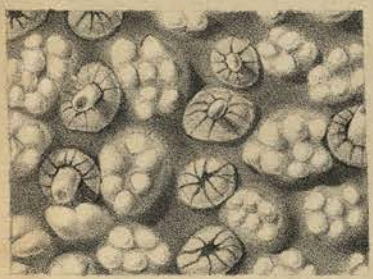

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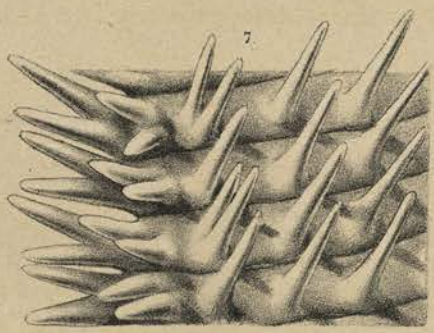

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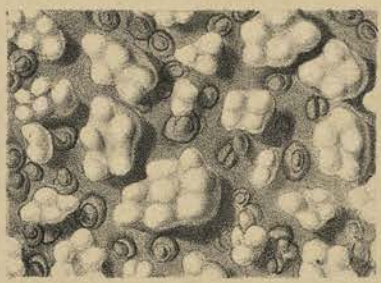

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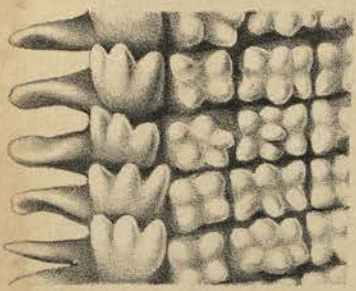

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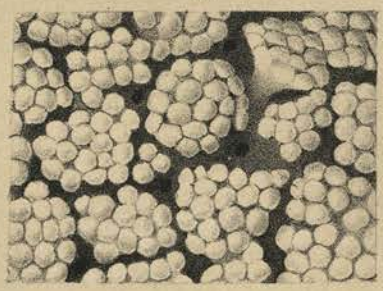

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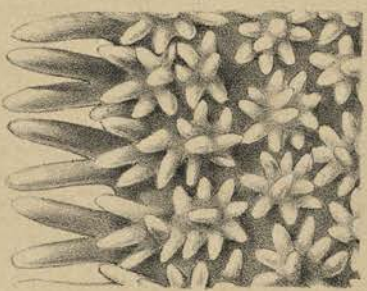


W.H. Crowther del. P.H. Michael lith. Mintern Bros. imp.

1. PERKNASTER FUSCUS, n.sp.
2–3. CYCETHRA ELECTILIS, n.sp.
4–5. MIMASTER COGNATUS, n.sp.
6–7. GANERIA FALKLANDICA, Gray.
8–9. CYCETHRA PINGUIS, n.sp.
10–11. CYCETHRA NITIDA, n.sp.

PLATE LXIII.

PLATE LXIII.

Page

Figs. 1, 2. PATIRIA BELLULA, n. sp. 385

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

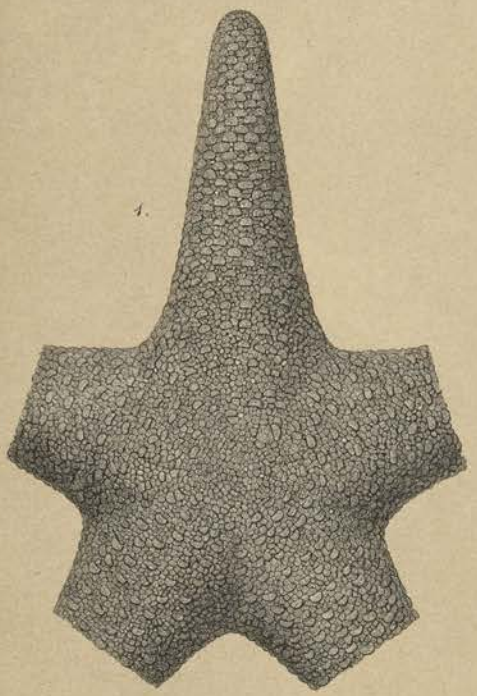
[For magnified details of this species see Pl. LXIV. figs. 5, 6.]

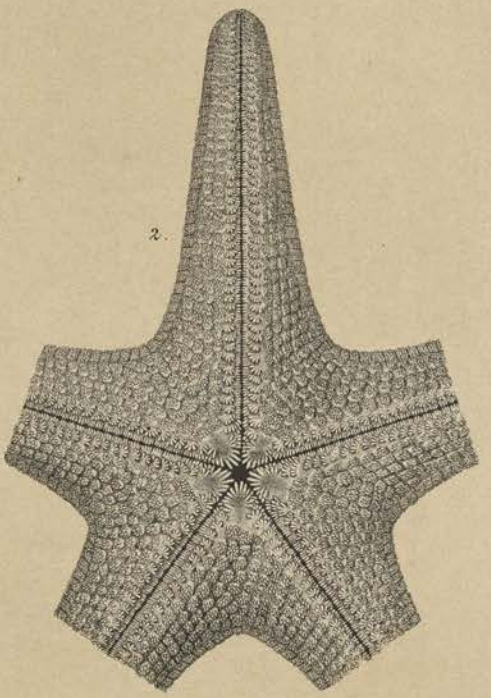
Figs. 3–5. NEPANTHIA BREVIS, Perrier, ... 387

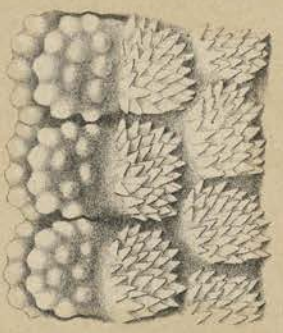
Fig. 3. Abactinal aspect; magnified 2 diameters.

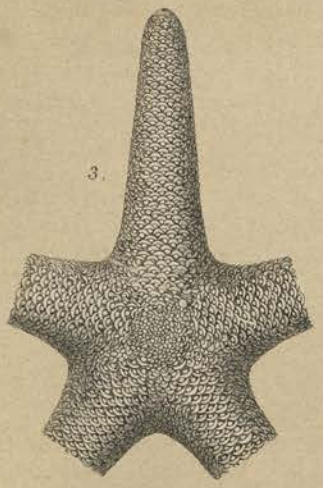
Fig. 4. Actinal aspect; magnified 2 diameters.

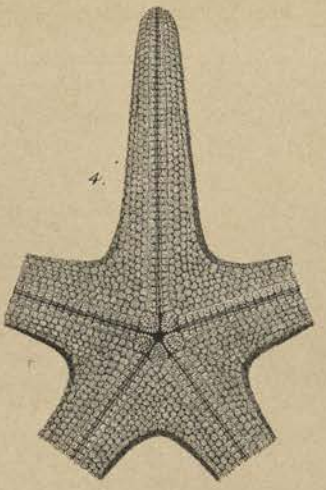
Fig. 5. Adambulacral plates and adjacent portion of the actinal surface; magnified 25 diameters.











W.H. Crowther del. Hollick ath. Hanhart imp.

1-2. PATIRIA BELLULA, n. sp. 3-5. NEPANTHIA BREVIS, Perrier.

PLATE LXIV.

PLATE LXIV.

Page

Figs. 1–4. NEPANTHIA MACULATA, Gray, . . . 388

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

Fig. 3. A portion of the abactinal surface; magnified 20 diameters.

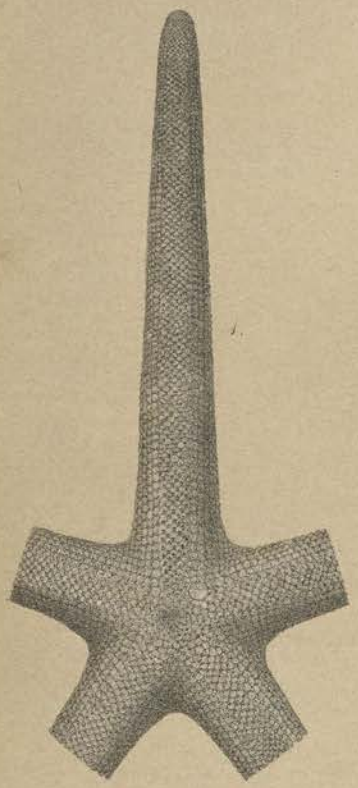
Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

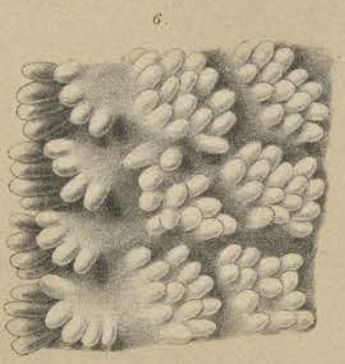
Figs. 5, 6. PATIRIA BELLULA, n. sp. 385

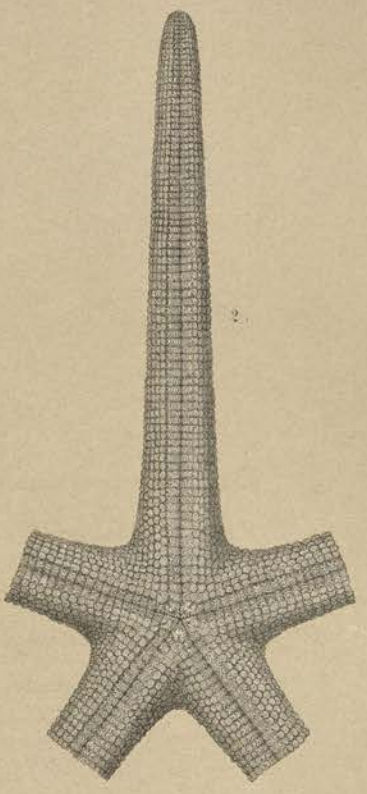
Fig. 5. A portion of the abactinal surface; magnified 10 diameters.

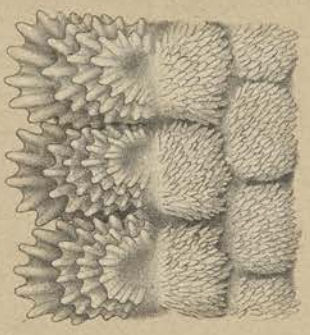
Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

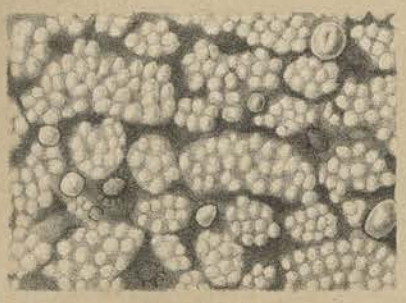
[For macroscopic figures of this species see Pl. LXIII. figs. 1, 2.]

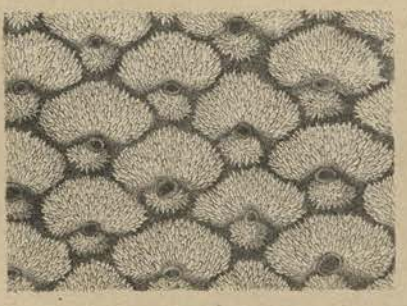












W.H. Crowther del. Hollick lith.

Hanhart imp

1-4. NEPANTHIA MACULATA, Gray. 5-6. PATIRIA BELLULA, n.sp

PLATE LXV.

PLATE LXV.

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Figs. 1–4. OPHIDIASTER TUBERIFER, n. sp. . . . 404

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 12 diameters.

Fig. 4. A portion of the abactinal surface; magnified 12 diameters.

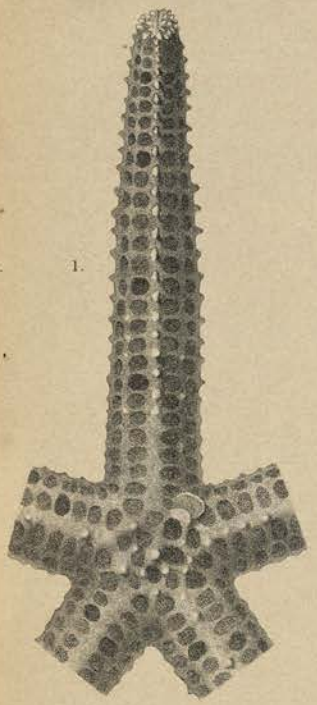
Figs. 5–8. NARCISSIA TRIGONARIA, n. sp. . . . 414

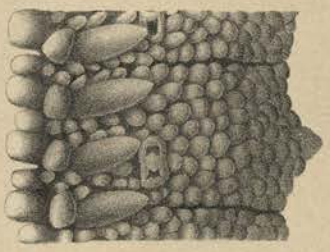
Fig. 5. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

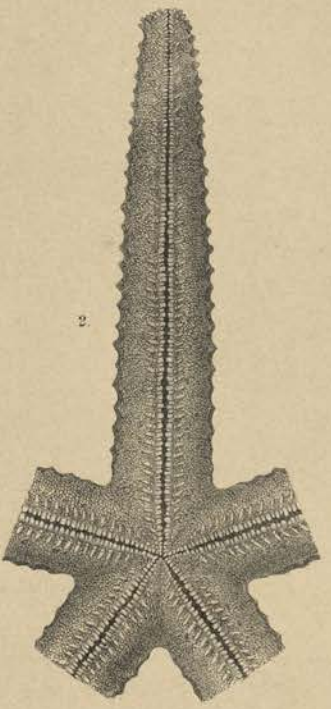
Fig. 6. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

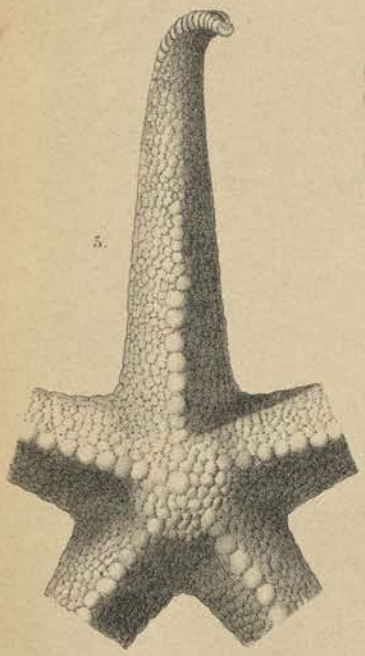
Fig. 7. Adambulacral plates and adjacent portion of the actinal surface; magnified 12 diameters.

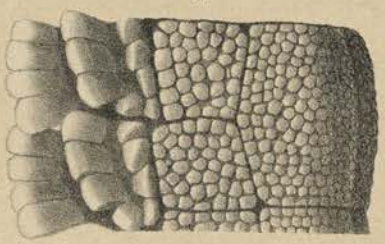
Fig. 8. A portion of the abactinal surface; magnified 10 diameters.

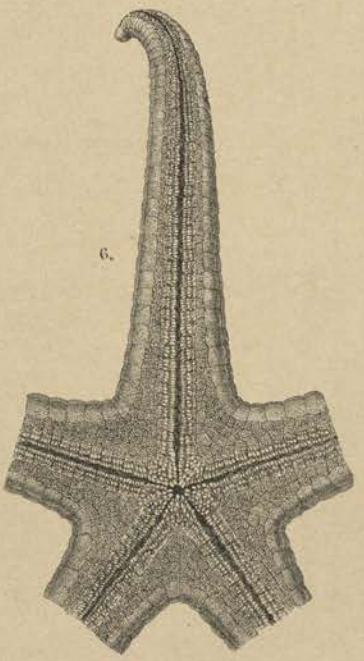


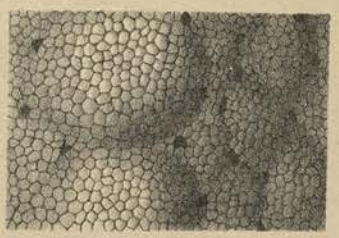












W. H. Growther del. et lith.

Minters Bros. imp.

1–4. OPHIDIASTER TUBERIFER, n. sp. 5–8. NARCISSIA TRIGONARIA, n. sp.

PLATE LXVI.

PLATE LXVI.

PLATE LXVI.

Page

Figs. 1, 2. ZOROASTER FULGENS, Wyville Thomson, . . 418

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

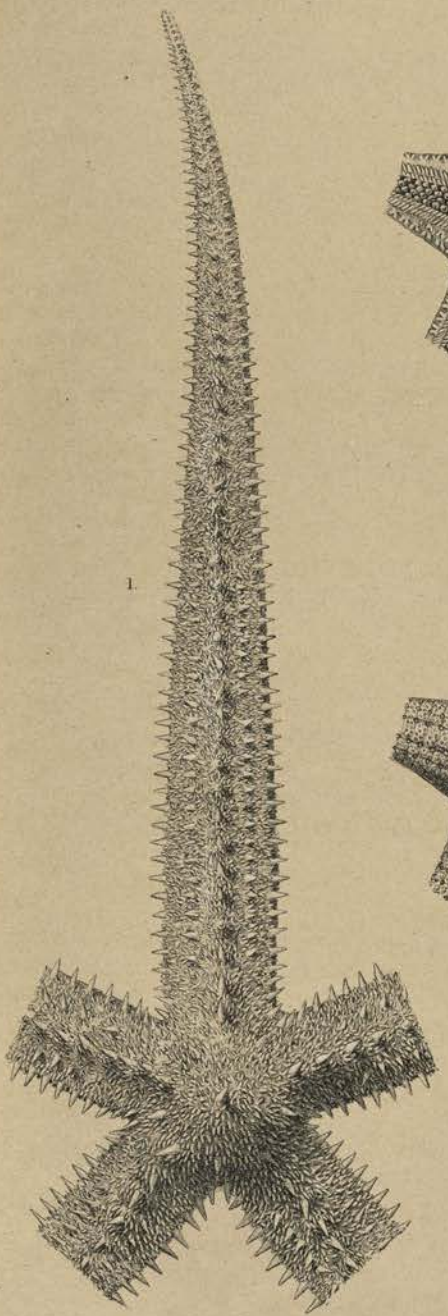
[For magnified details of this species see Pl. LXVIII. figs. 1, 2.]

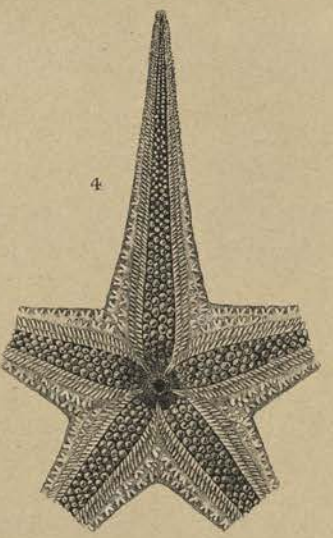
Figs. 3, 4. NEOMORPHASTER EUSTICHUS, n. sp. . . . 438

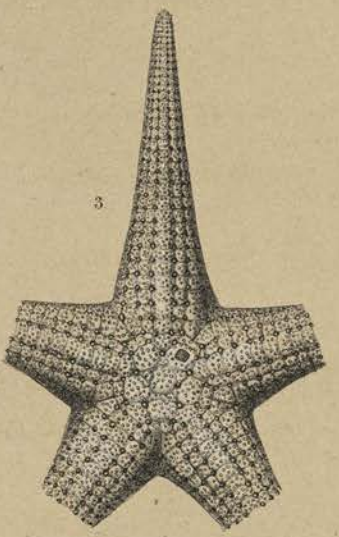
Fig. 3. Abactinal aspect; magnified 2 diameters.

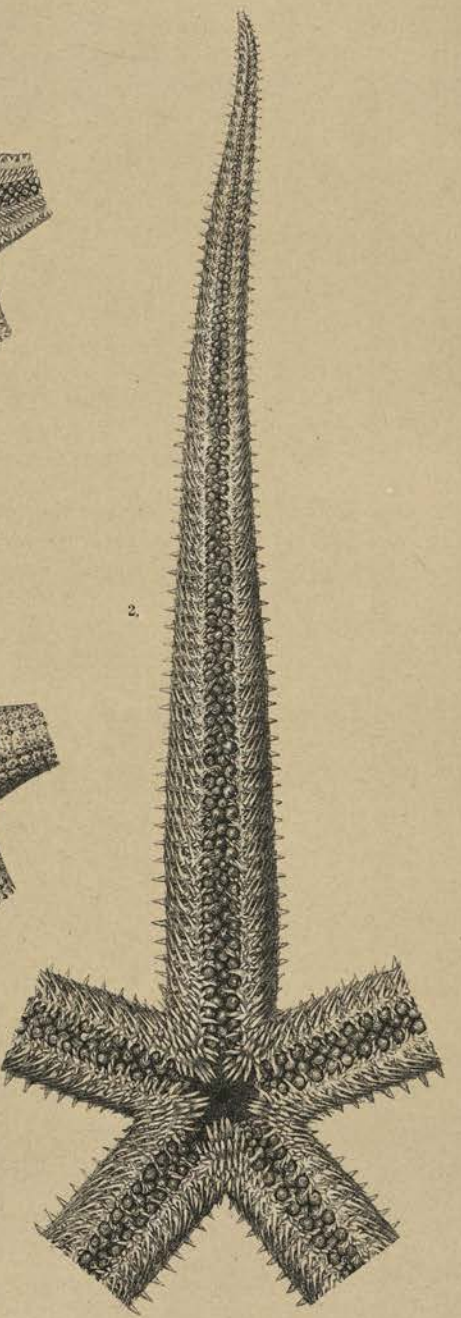
Fig. 4. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. LXVIII. figs. 9, 10.]









F. H. Michael del. et lith. Mintern Bros. imp.

1–2. ZOROASTER FULGENS, Wyville Thomson. 3–4. NEOMORPHASTER EUSTICHUS, n. sp.

PLATE LXVII.

PLATE LXVII.

Page

Figs. 1, 2. ZOROASTER TENUIS, n. sp. 421

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. LXVIII. figs. 7, 8.]

Figs. 3, 4. CNEMIDASTER WYVILLII, n. sp. . . . 424

Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. LXVIII. figs. 3, 4.]

Figs. 5, 6. PHOLIDASTER SQUAMATUS, n. sp. . . . 427

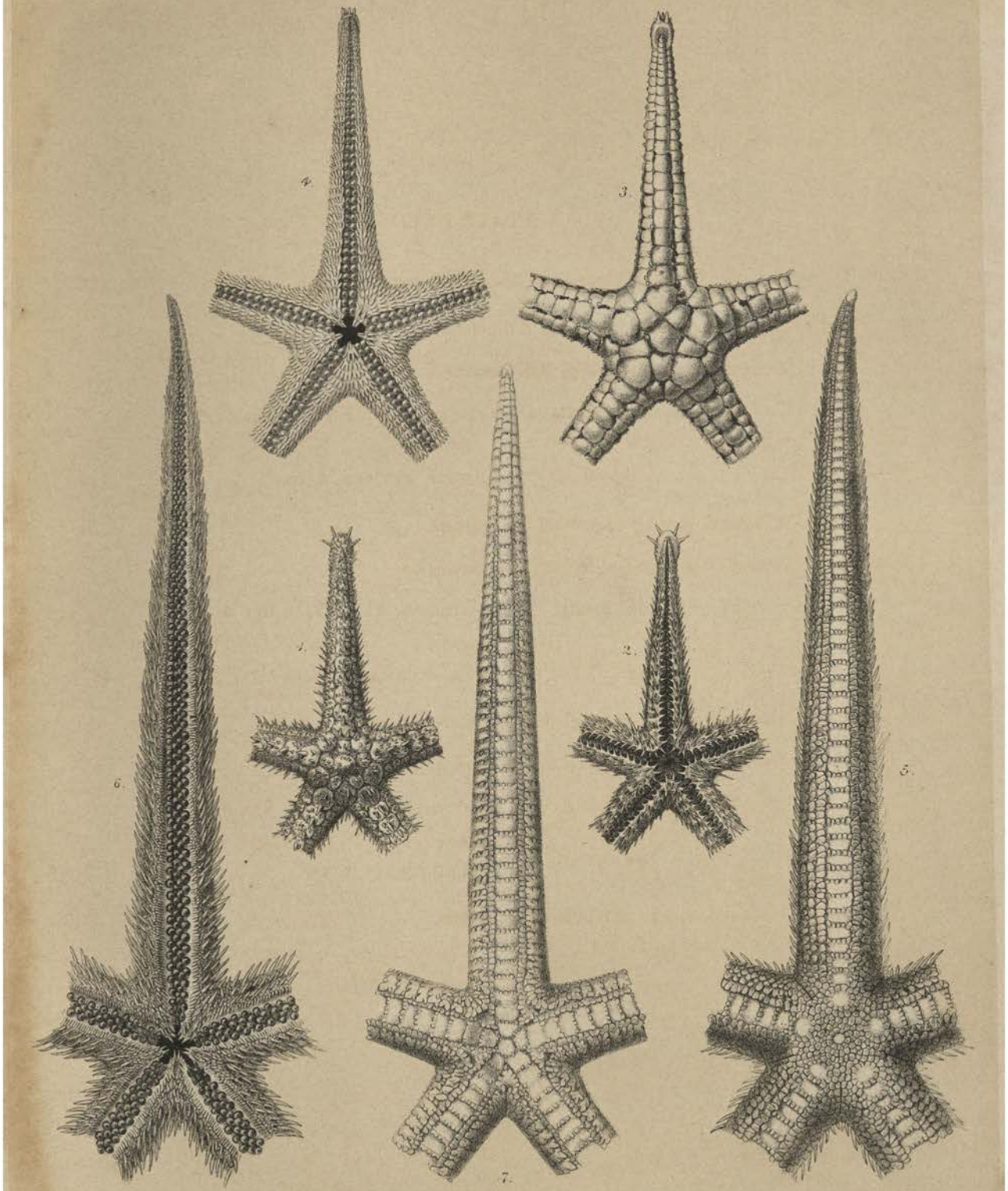
Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. LXVIII. figs. 5, 6.]

Fig. 7. PHOLIDASTER DISTINCTUS, n. sp. 429

Fig. 7. Abactinal aspect; magnified 2 diameters.



T. H. Michael del. Hollick lith. Hanhart imp.

1-2. ZOROASTER TENUIS, n. sp.
3-4. CNEMIDASTER WYVILLII, n. sp.
5-6. PHOLIDASTER SQUAMATUS, n. sp.
7. PHOLIDASTER DISTINCTUS, n. sp.

PLATE LXVIII.

PLATE LXVIII.

Page

Figs. 1, 2. ZOROASTER FULGENS, Wyville Thomson, . . . 418

Fig. 1. A portion of the abactinal surface; magnified 10 diameters.

Fig. 2. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For macroscopic figures of this species see Pl. LXVI. figs. 1, 2.]

Figs. 3, 4. CNEMIDASTER WYVILLII, n. sp. . . . 424

Fig. 3. A portion of the abactinal surface; magnified 18 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 25 diameters.

[For macroscopic figures of this species see Pl. LXVII. figs. 3, 4.]

Figs. 5, 6. PHOLIDASTER SQUAMATUS, n. sp. . . . 427

Fig. 5. A portion of the abactinal surface; magnified 12 diameters.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 12 diameters.

[For macroscopic figures of this species see Pl. LXVII. figs. 5, 6.]

Figs. 7, 8. ZOROASTER TENUIS, n. sp. 421

Fig. 7. A portion of the abactinal surface; magnified 12 diameters.

Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified.

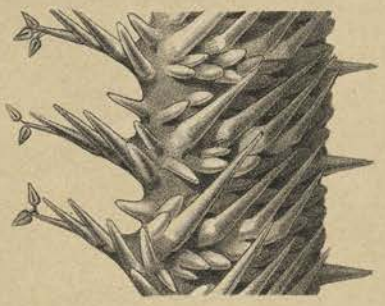
[For macroscopic figures of this species see Pl. LXVII. figs. 1, 2.]

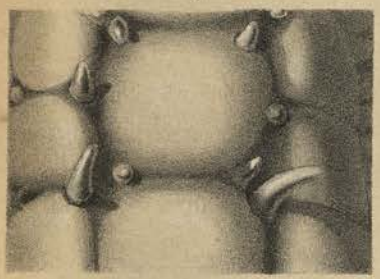
Figs. 9, 10. NEOMORPHASTER EUSTICHUS, n. sp. . . . 438

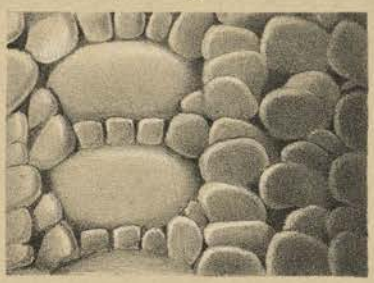
Fig. 9. A portion of the abactinal surface; magnified 12 diameters.

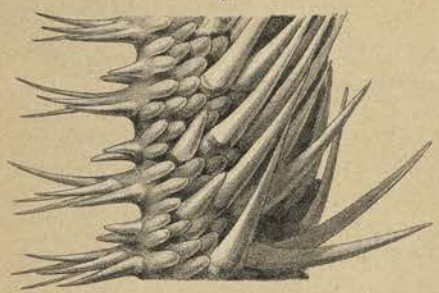
Fig. 10. Adambulacral plates and adjacent portion of the actinal surface; magnified 24 diameters.

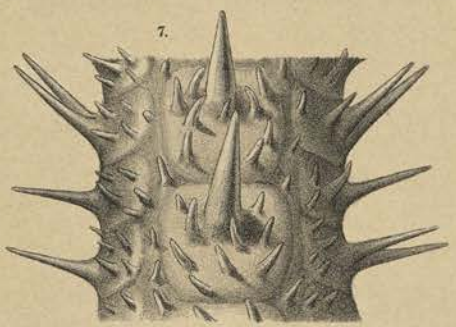
[For macroscopic figures of this species see Pl. LXVI. figs. 3, 4.]

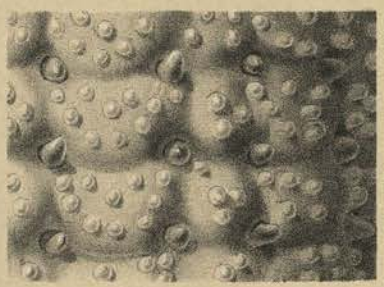












F. H. Michael del. et lith.

Mintern Bros. imp.

1–2. ZOROASTER FULGENS, Wyville Thomson. 3–4. CNEMIDASTER WYVILLII, n. sp.
5–6. PHOLIDASTER SQUAMATUS, n. sp. 7–8. ZOROASTER TENUIS, n. sp.
9–10. NEOMORPHASTER EUSTICHUS, n. sp.

PLATE LXIX.

PLATE LXIX.

Page

Figs. 1–4. RHIPIDASTER VANNIPES, n. sp. 448

Fig. 1. Abactinal surface; natural size.

Fig. 2. Actinal surface; natural size.

Fig. 3. A portion of the abactinal surface; magnified 12 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

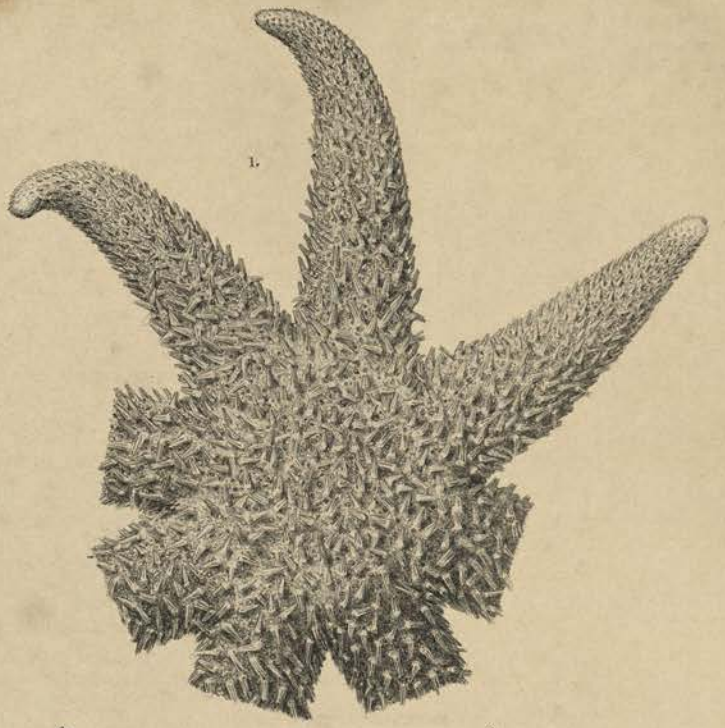
Figs. 5–7. OPHIDIASTER HELICOSTICHUS, n. sp. 405

Fig. 5. Abactinal aspect; natural size.

Fig. 6. A portion of the abactinal surface; magnified 12 diameters.

Fig. 7. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

2.



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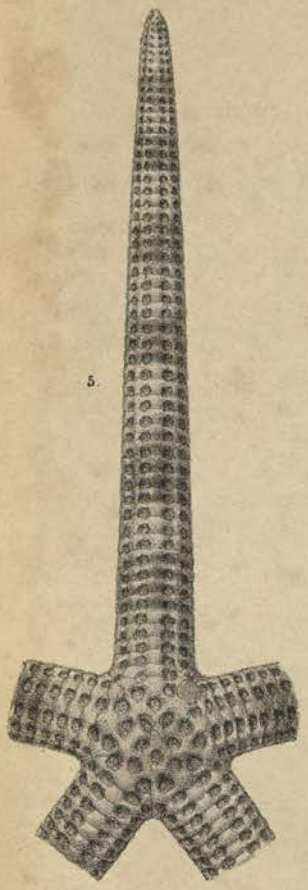

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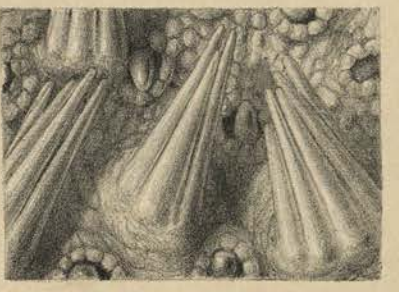

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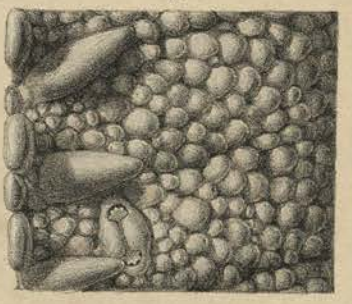

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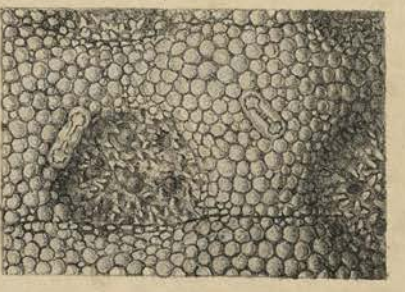


6.

F. H. Michael del. et lith. Mintern Bros. imp.

1–4. RHIPIDASTER VANNIPES, n. sp. 5–7. OPHIDIASTER HELICOSTICHUS, n. sp.

PLATE LXX.

PLATE LXX.

Page

Fig. 1. SOLASTER REGULARIS, n. sp. 454

Fig. 1. Abactinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. LXXII. figs. 5, 6.]

Fig. 2. SOLASTER SUBARCUATUS, n. sp. 455

Fig. 2. Abactinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. LXXII. figs. 7, 8.]

Figs. 3, 4. SOLASTER TORULATUS, n. sp. 457

Fig. 3. Abactinal aspect; magnified 1½ diameters.

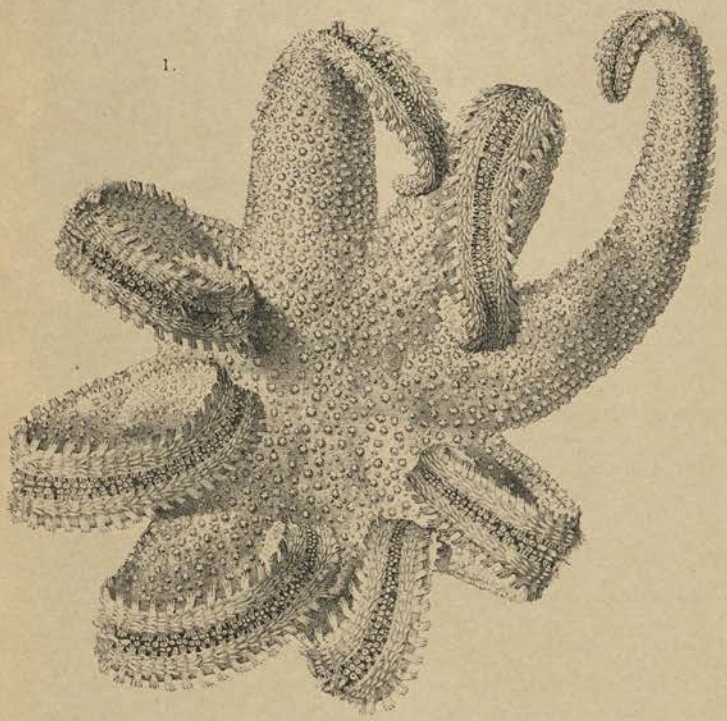
Fig. 4. Actinal aspect; magnified 1½ diameters.

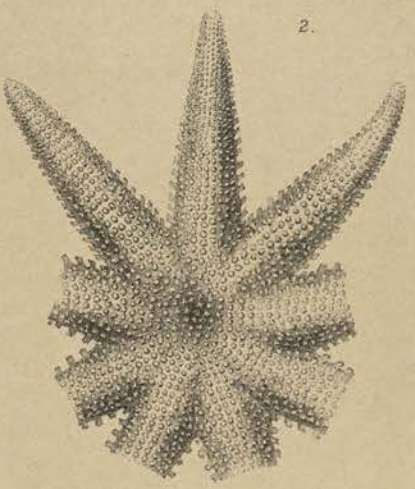
[For magnified details of this species see Pl. LXXII. figs. 3, 4.]

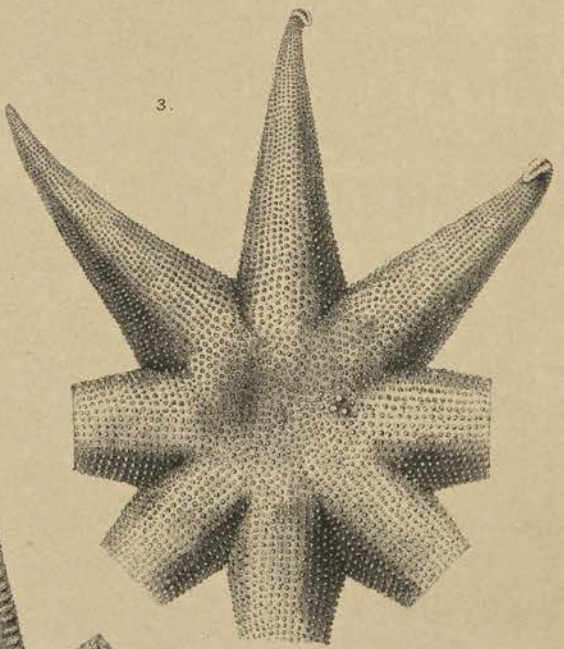
Fig. 5. CROSSASTER PENICILLATUS, n. sp. 446

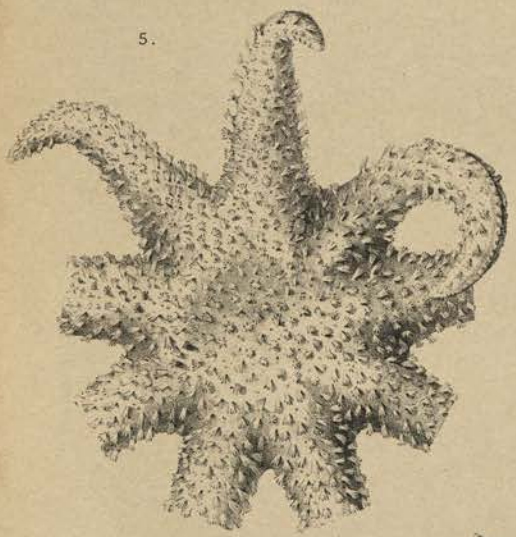
Fig. 5. Abactinal aspect; magnified 2 diameters.

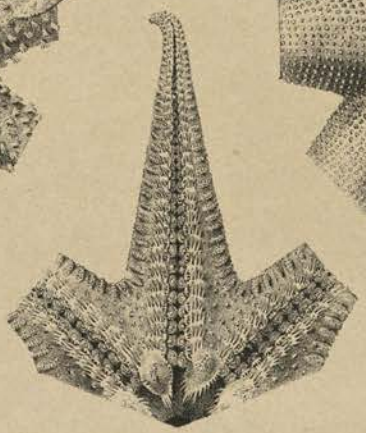
[For magnified details of this species see Pl. LXXII. figs. 9, 10.]











1. SOLASTER REGULARIS, n. sp. 2. SOLASTER SUBARCUATUS, n. sp.
3-4. SOLASTER TORULATUS, n. sp. 5. CROSSASTER PENICILLATUS, n. sp.

PLATE LXXI.

PLATE LXXI.

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Figs. 1–3. SOLASTER PAXILLATUS, n. sp. . . . 452

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

Fig. 3. Actinal aspect of a large example; natural size.

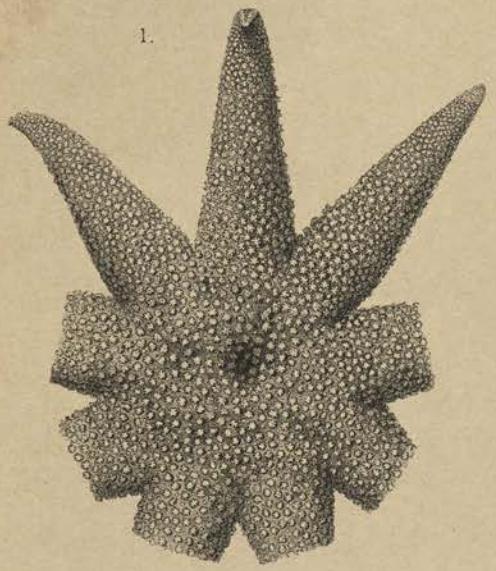
[For magnified details of this species see Pl. LXXII. figs. 1, 2.]

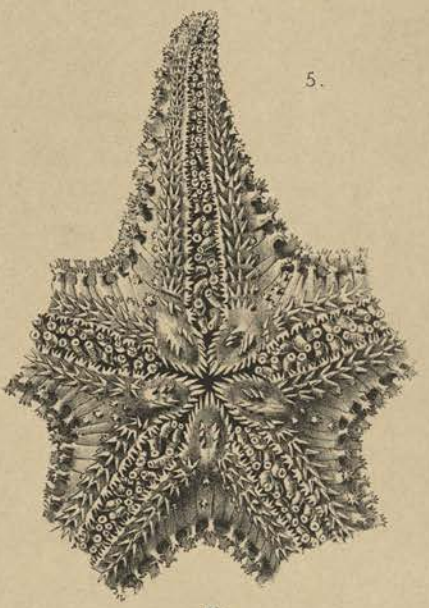
Figs. 4, 5. LOPHASTER STELLANS, n. sp. 460

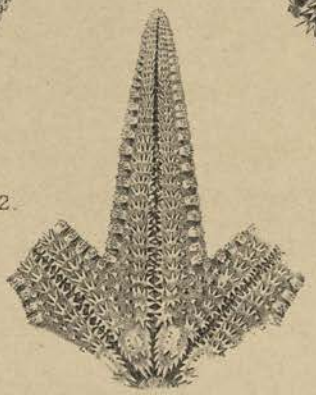
Fig. 4. Abactinal aspect; magnified 2 diameters.

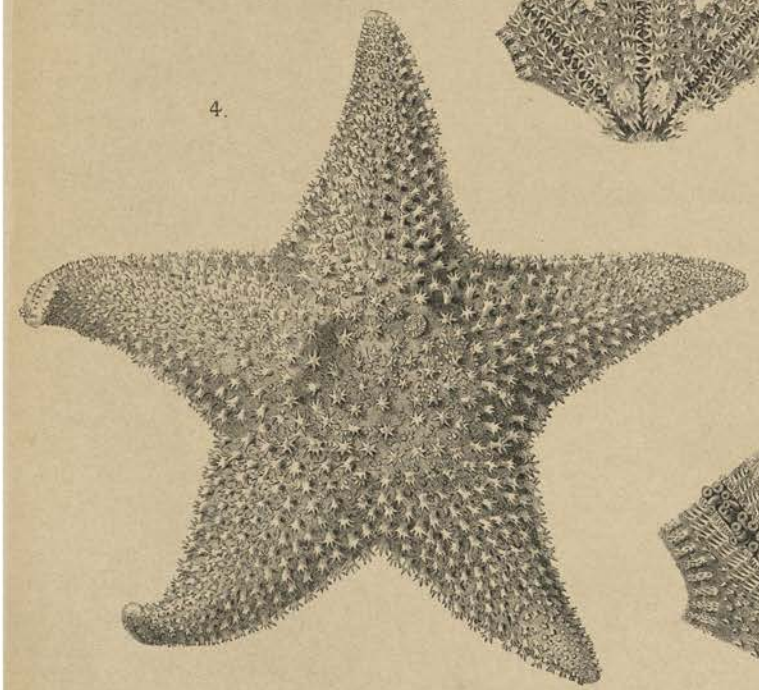
Fig. 5. Actinal aspect; magnified 2 diameters.

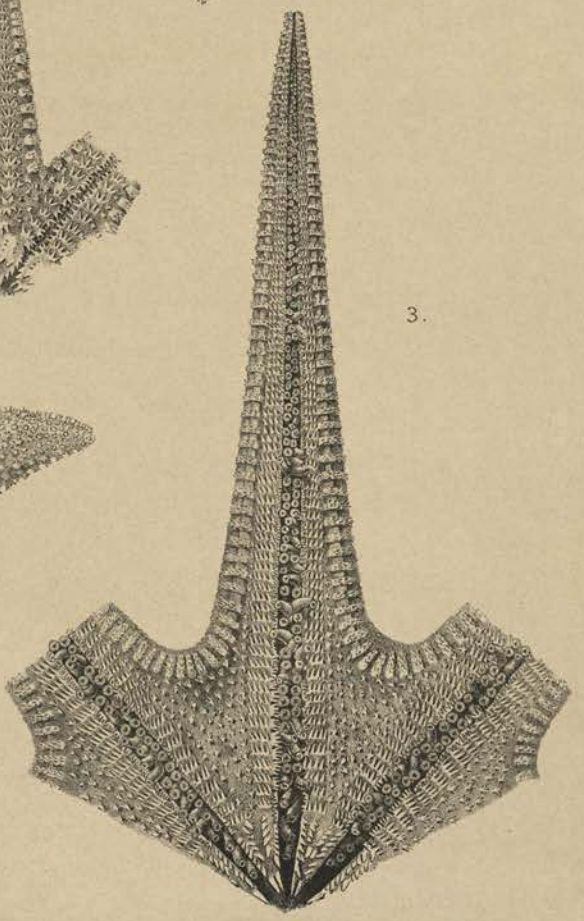
[For magnified details of this species see Pl. LXXII. figs. 11, 12.]











F.H.Michael del. F.Huth, Lith^r Edin^r

1-3. SOLASTER PAXILLATUS, n. sp. 4-5. LOPHASTER STELLANS, n. sp.

PLATE LXXII.

PLATE LXXII.

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Figs. 1, 2. SOLASTER PAXILLATUS, n. sp. 452

Fig. 1. A portion of the abactinal surface; magnified 25 diameters.

Fig. 2. Adambulacral plates and adjacent portion of the actinal surface (from a large example); magnified 6 diameters.

[For macroscopic figures of this species see Pl. LXXI. figs. 1–3.]

Figs. 3, 4. SOLASTER TORULATUS, n. sp. 457

Fig. 3. A portion of the abactinal surface; magnified 32 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified.

[For macroscopic figures of this species see Pl. LXX. figs. 3, 4.]

Figs 5, 6. SOLASTER REGULARIS, n. sp. 454

Fig. 5. A portion of the abactinal surface; magnified 15 diameters.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 9 diameters.

[For a macroscopic figure of this species see Pl. LXX. fig. 1.]

Figs. 7, 8. SOLASTER SUBARCUATUS, n. sp. 455

Fig. 7. A portion of the abactinal surface; magnified 16 diameters.

Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified 13 diameters.

[For a macroscopic figure of this species see Pl. LXX. fig. 2.]

Figs. 9, 10. CROSSASTER PENICILLATUS, n. sp. 446

Fig. 9. A portion of the abactinal surface; magnified 15 diameters.

Fig. 10. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For a macroscopic figure of this species see Pl. LXX. fig. 5.]

Figs. 11, 12. LOPHASTER STELLANS, n. sp. 460

Fig. 11. A portion of the abactinal surface; magnified 12 diameters.

Fig. 12. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. LXXI. figs. 4, 5.]

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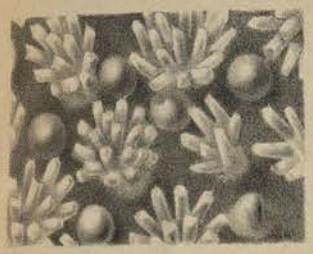

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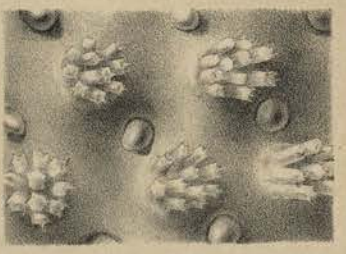

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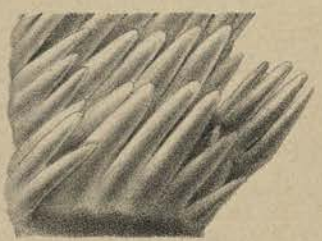

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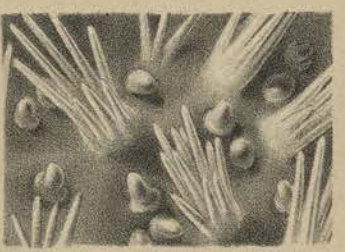

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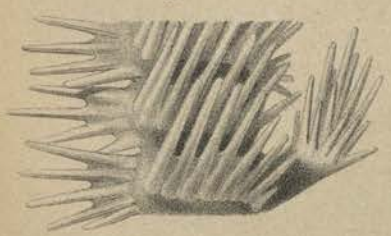

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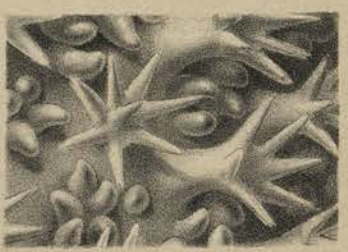

12.

F. H. Michael del. et lith. Mintern Bros. imp.

1–2. SOLASTER PAXILLATUS, n. sp.
3–4. SOLASTER TORULATUS, n. sp.
5–6. SOLASTER REGULARIS, n. sp.
7–8. SOLASTER SUBARCUATUS, n. sp.
9–10. CROSSASTER PENICILLATUS, n. sp.
11–12. LOPHASTER STELLANS, n. sp.

PLATE LXXIII.

PLATE LXXIII.

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Figs. 1–3. CHITONASTER CATAPHRACTUS, n. sp. . . . 283

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

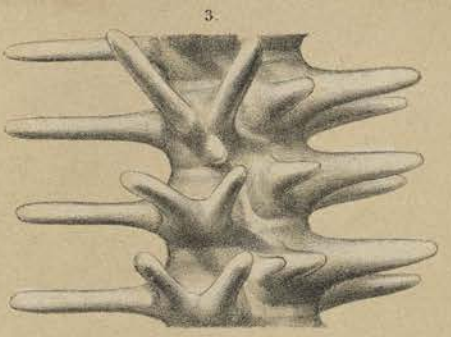
Figs. 4–7. PERIBOLASTER FOLLICULATUS, n. sp. . . . 465

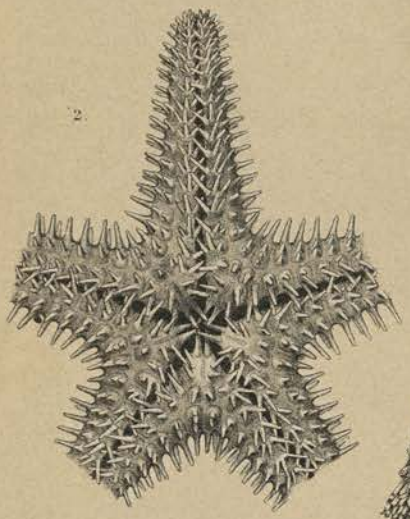
Fig. 4. Abactinal aspect; natural size.

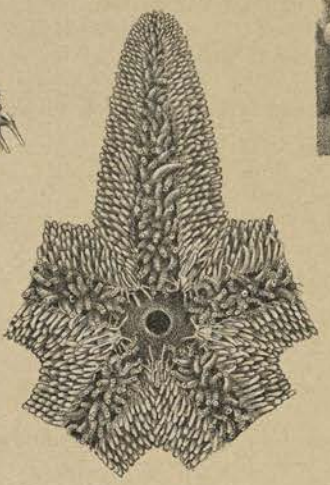
Fig. 5. Actinal aspect; natural size.

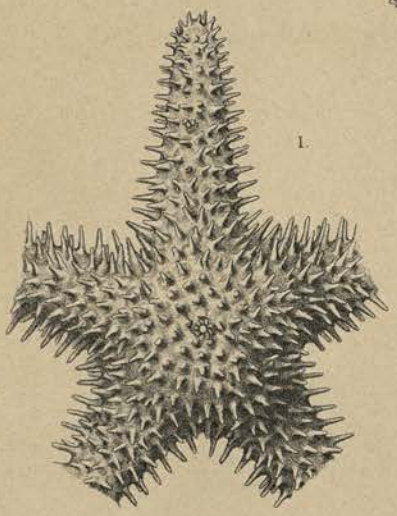
Fig. 6. A portion of the abactinal surface; magnified 8 diameters.

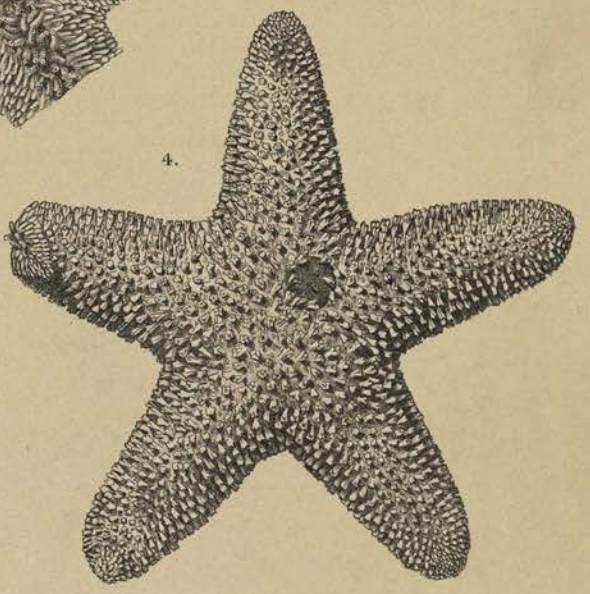
Fig. 7. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.











F.H. Michael del. et lith.

Mintern Bros. imp.

1–3. CHITONASTER CATAPHRACTUS, n. sp. 4–7. PERIBOLASTER FOLLICULATUS, n. sp.

PLATE LXXIV.

PLATE LXXIV.

Page

Figs. 1, 2. PTERASTER STELLIFER, n. sp. 474

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. LXXVII. figs. 1, 2.]

Figs. 3, 4. PTERASTER RUGATUS, n. sp. . . . 473

Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

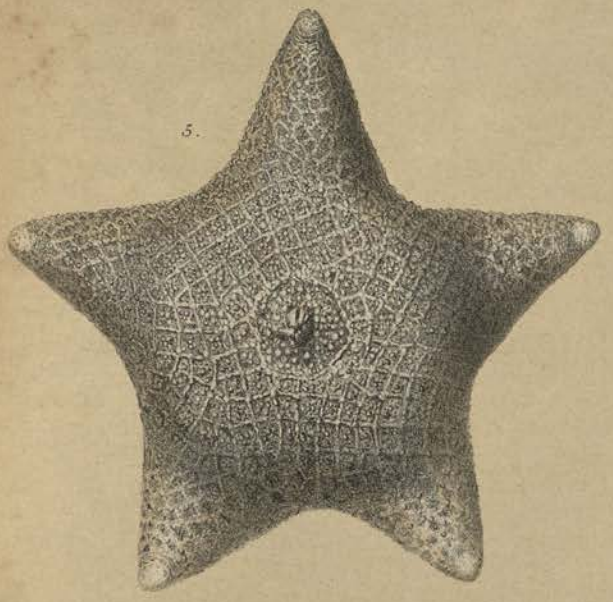
[For magnified details of this species see Pl. LXXVII. figs. 3, 4.]

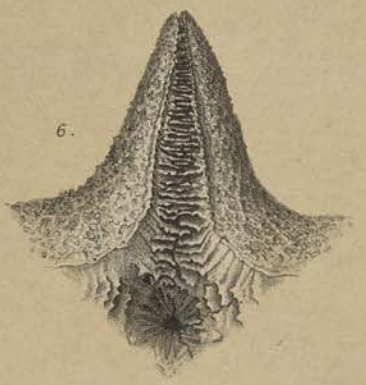
Figs. 5, 6. RETASTER GIBBER, n. sp. 481

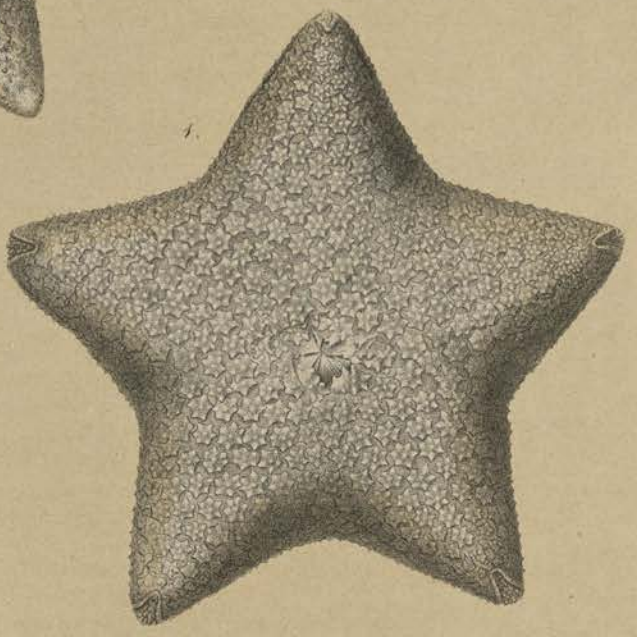
Fig. 5. Abactinal aspect; magnified 2 diameters.

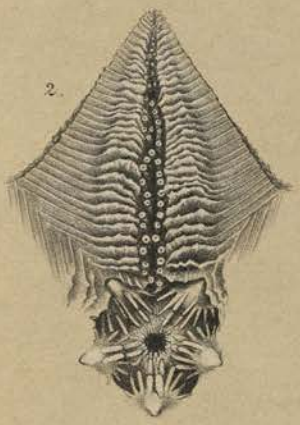
Fig. 6. Actinal aspect; magnified 2 diameters.

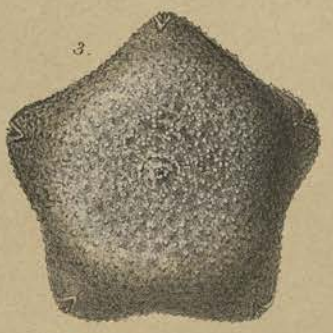
[For magnified details of this species see Pl. LXXVII. figs. 7, 8.]











F.H. Michael. del. Hollick lith.

Hanhart imp.

1-2. PTERASTER STELLIFER, n. sp. 3-4. PTERASTER RUGATUS, n. sp.
5-6. RETASTER GIBBER, n. sp.

PLATE LXXV.

PLATE LXXV.

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Figs. 1–4. RETASTER PEREGRINATOR, n. sp. . . . 479

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

Fig. 3. A portion of the supradorsal membrane; magnified 10 diameters.

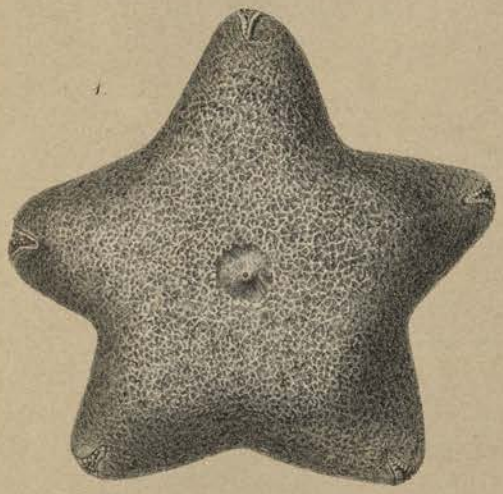
Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 5 diameters.

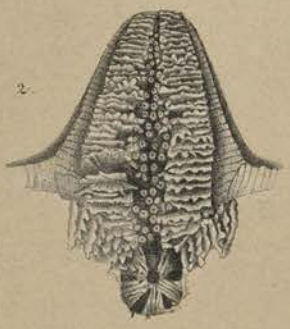
Figs. 5, 6. PTERASTER SEMIRETICULATUS, n. sp. . . 475

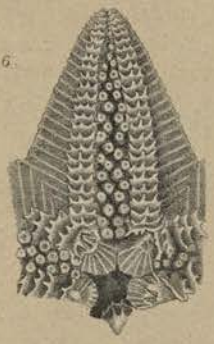
Fig. 5. Abactinal aspect; magnified 3 diameters.

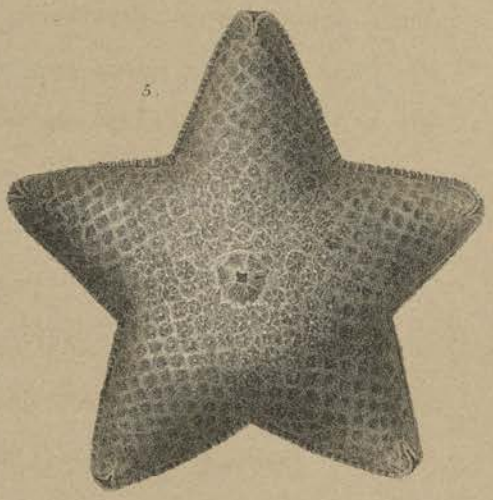
Fig. 6. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. LXXVII. figs. 5, 6.]









1-4. RETASTER PEREGRINATOR, n. sp. 5-6. PTERASTER SEMIRETICULATUS, n. sp.

PLATE LXXVI.

PLATE LXXVI.

Page

Figs. 1, 2. RETASTER VERRUCOSUS, n. sp. 478

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

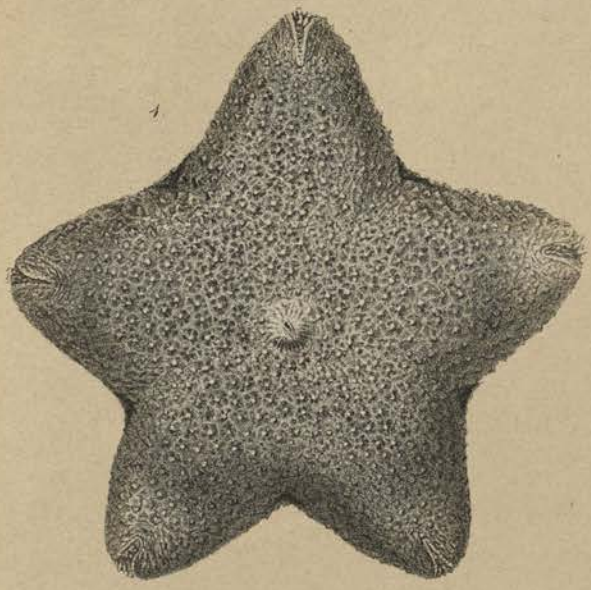
[For magnified details of this species see Pl. LXXVII. figs. 9, 10.]

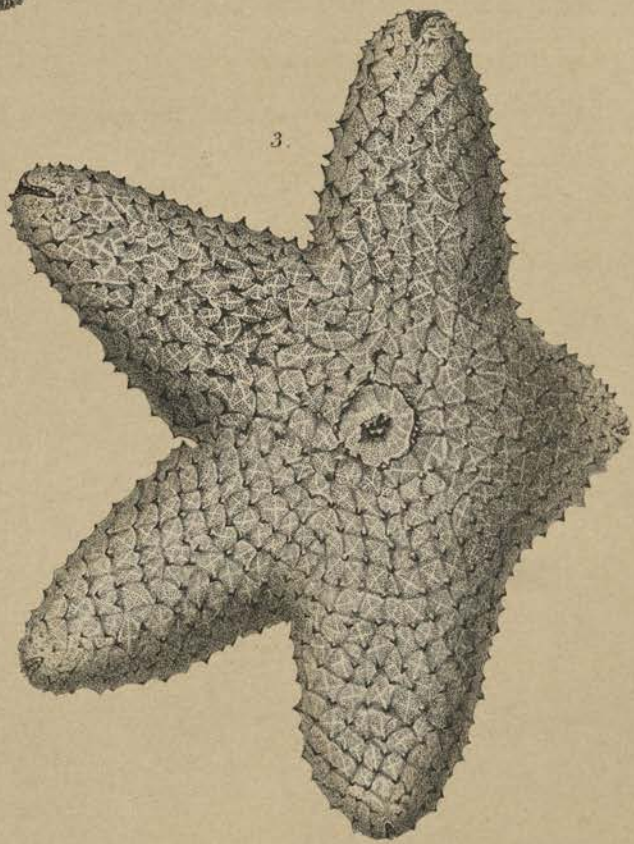
Figs. 3, 4. RETASTER INSIGNIS, n. sp. 482

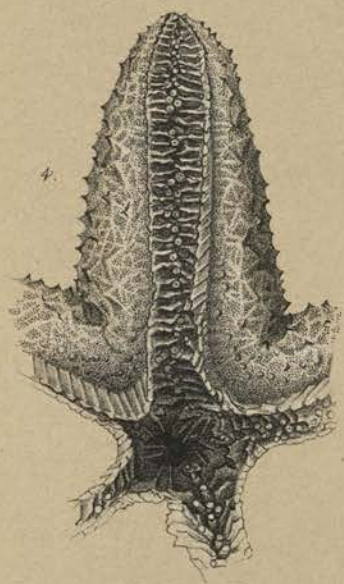
Fig. 3. Abactinal aspect; natural size.

Fig. 4. Actinal aspect; natural size.

[For magnified details of this species see Pl. LXXVII. figs. 11, 12.]







F.H. Michael del. Hildick lith. Hanhart imp.

1-2. RETASTER VERRUCOSUS, n. sp. 3-4. RETASTER INSIGNIS, n. sp.

PLATE LXXVII.

PLATE LXXVII.

Page

Figs. 1, 2. PTERASTER STELLIFER, n. sp. 474

Fig. 1. A portion of the supradorsal membrane; magnified 10 diameters.

Fig. 2. Adambulacral plates and adjacent portion of the actinal surface; magnified 6 diameters.

[For macroscopic figures of this species see Pl. LXXIV. figs. 1, 2.]

Figs. 3, 4. PTERASTER RUGATUS, n. sp. 473

Fig. 3. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 12 diameters.

[For macroscopic figures of this species see Pl. LXXIV. figs. 3, 4.]

Figs. 5, 6. PTERASTER SEMIRETICULATUS, n. sp. 475

Fig. 5. A portion of the supradorsal membrane; magnified 20 diameters.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 14 diameters.

[For macroscopic figures of this species see Pl. LXXV. figs. 5, 6.]

Figs. 7, 8. RETASTER GIBBER, n. sp. 481

Fig. 7. A portion of the supradorsal membrane; magnified 12 diameters.

Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. LXXIV. figs. 5, 6.]

Figs. 9, 10. RETASTER VERRUCOSUS, n. sp. . . . 478

Fig. 9. A portion of the supradorsal membrane; magnified 10 diameters.

Fig. 10. Adambulacral plates and adjacent portion of the actinal surface; magnified 5 diameters.

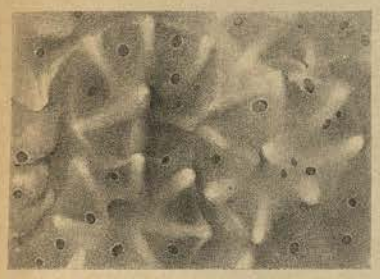
[For macroscopic figures of this species see Pl. LXXVI. figs. 1, 2.]

Figs. 11, 12. RETASTER INSIGNIS, n. sp. 482

Fig. 11. A portion of the supradorsal membrane; magnified 5 diameters.

Fig. 12. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For macroscopic figures of this species see Pl. LXXVI. figs. 3, 4.]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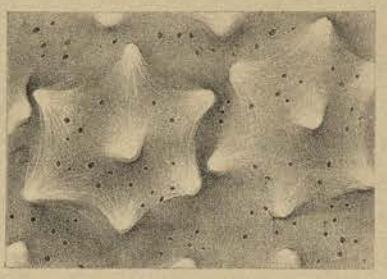
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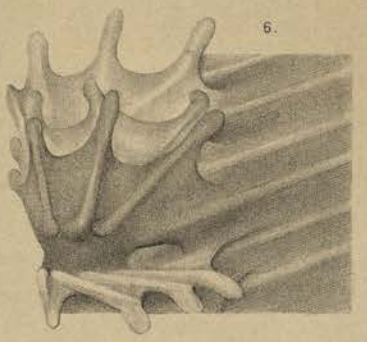
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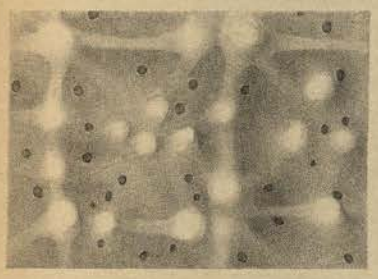
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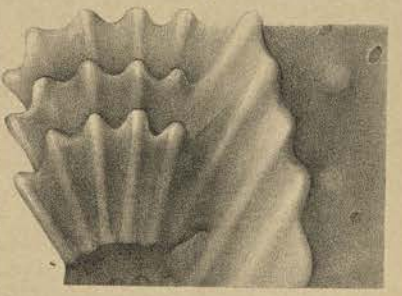
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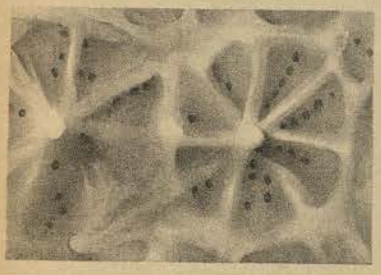
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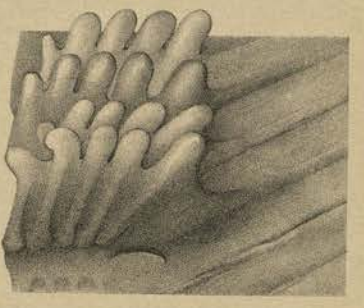
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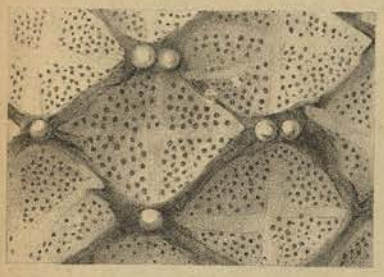
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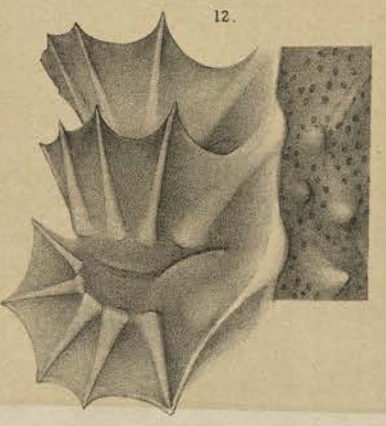
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1-2. PTERASTER STELLIFER, n.sp. 3-4. PTERASTER RUGATUS, n.sp. 5-6. PTERASTER SEMIRETICULATUS, n.sp.
7-8. RETASTER GIBBER, n.sp. 9-10. RETASTER VERRUCOSUS, n.sp. 11-12. RETASTER INSIGNIS, n.sp.

PLATE LXXVIII.

PLATE LXXVIII.

Page

Figs. 1, 2. CALYPTRASTER COA, n. sp. 489

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. LXXIX. figs. 1–3.]

Figs. 3, 4. MARSIPASTER HIRSUTUS, n. sp. 487

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

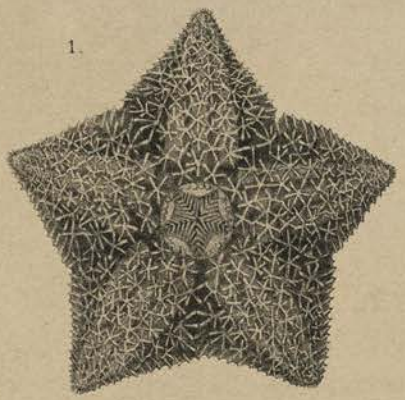
[For magnified details of this species see Pl. LXXIX. figs. 4–6.]

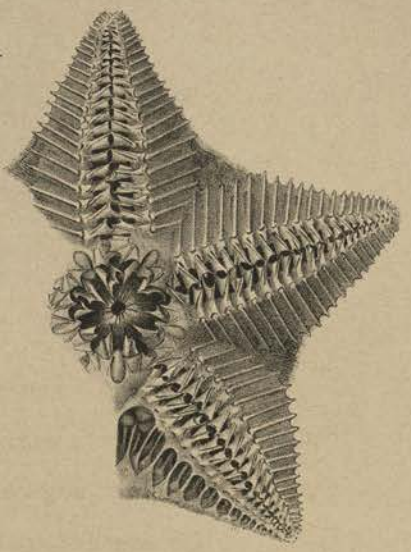
Figs. 5, 6. MARSIPASTER SPINOSISSIMUS, n. sp. 485

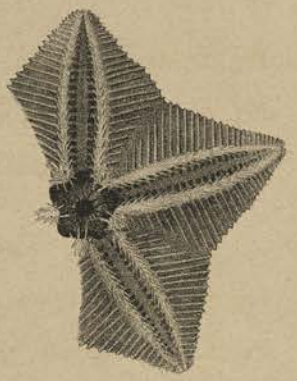
Fig. 5. Abactinal aspect; magnified 3 diameters.

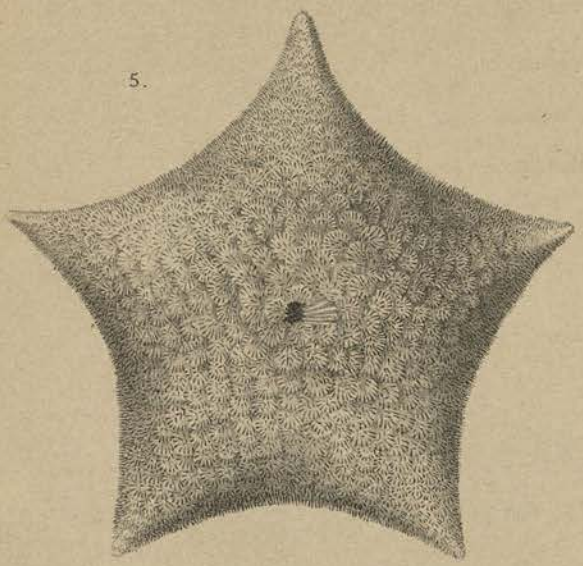
Fig. 6. Actinal aspect; magnified 3 diameters.

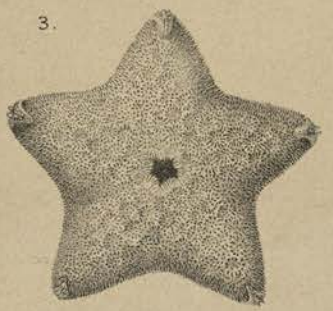
[For magnified details of this species see Pl. LXXIX. figs. 7–9.]











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1-2. CALYPTRASTER COA, n. sp. 3-4. MARSIPASTER HIRSUTUS, n. sp.
5-6. MARSIPASTER SPINOSISSIMUS, n. sp.

PLATE LXXIX.

PLATE LXXIX.

Page

Figs. 1–3. CALYPTRASTER COA, n. sp. 489

Fig. 1. A portion of the supradorsal membrane; magnified 20 diameters.

Fig. 2. Mouth-plates; magnified.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 20 diameters.

[For macroscopic figures of this species see Pl. LXXVIII. figs. 1, 2.]

Figs. 4–6. MARSIPASTER HIRSUTUS, n. sp. . . . 487

Fig. 4. A portion of the supradorsal membrane; magnified 20 diameters.

Fig. 5. Mouth-plates; magnified.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. LXXVIII. figs. 3, 4.]

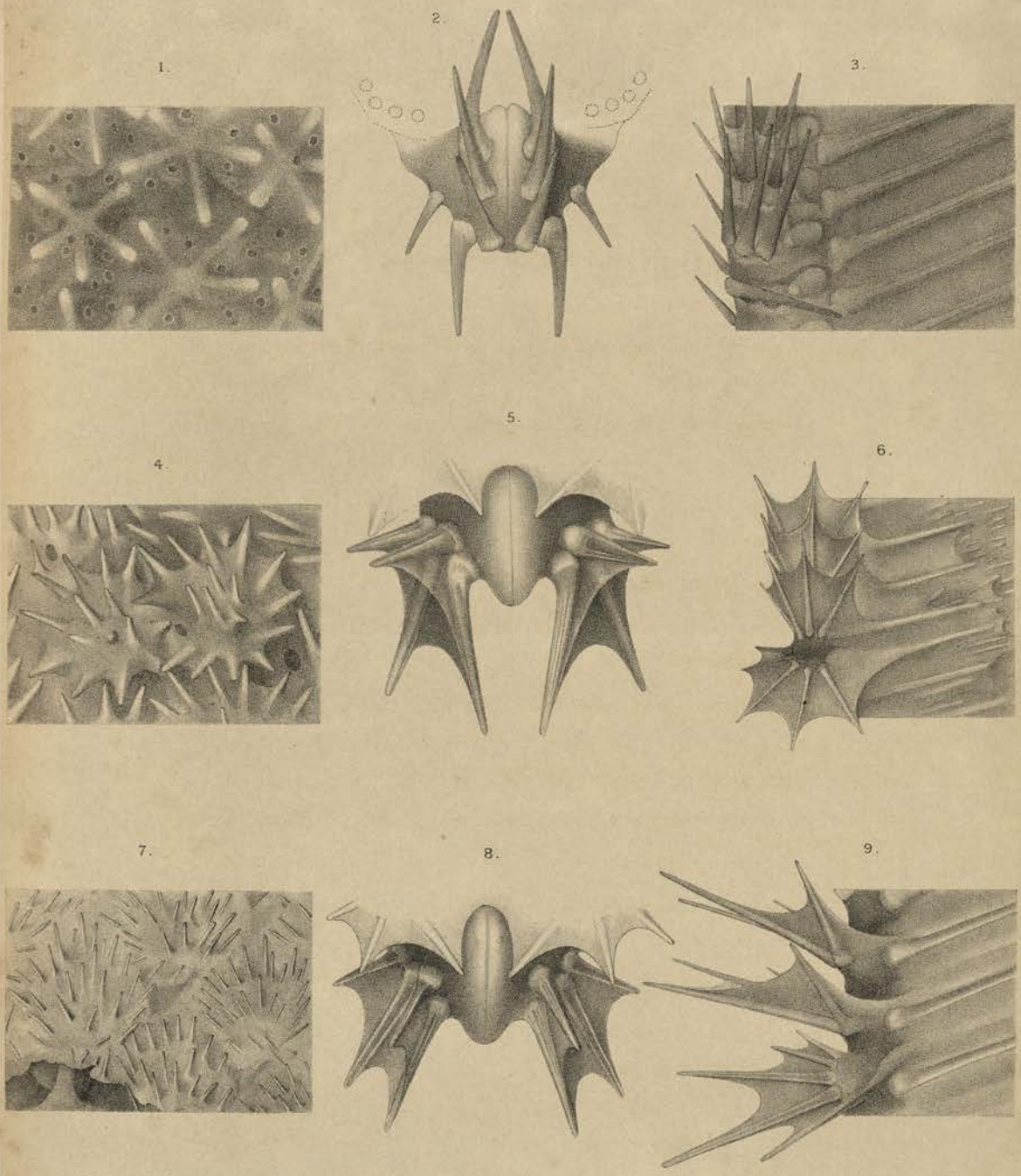
Figs. 7–9. MARSIPASTER SPINOSISSIMUS, n. sp. . . . 485

Fig. 7. A portion of the supradorsal membrane; magnified 20 diameters.

Fig. 8. Mouth-plates; magnified.

Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. LXXVIII. figs. 5, 6.]



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F. Huth Lith^r Edin^r

1-3. CALYPTRASTER COA, n. sp. 4-6. MARSIPASTER HIRSUTUS, n. sp.
7-9. MARSIPASTER SPINOSISSIMUS, n. sp.

PLATE LXXX.

PLATE LXXX.

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Figs. 1–5. HYMENASTER PELLUCIDUS, Wyville Thomson, . . 508

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

Fig. 3. A portion of the supradorsal membrane; magnified 20 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 18 diameters.

Fig. 5. Mouth-plates; magnified.

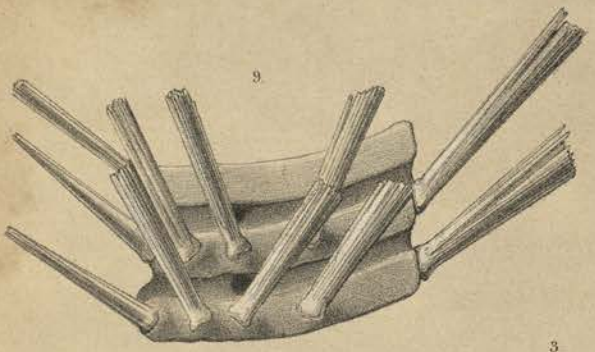
Figs. 6–9. KORETHRASTER HISPIDUS, Wyville Thomson, . . 464

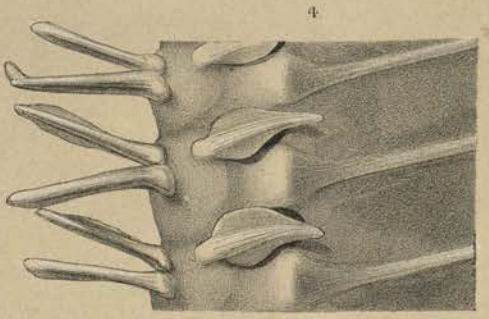
Fig. 6. Abactinal aspect; magnified 4 diameters.

Fig. 7. Actinal aspect; magnified 4 diameters.

Fig. 8. A portion of the abactinal surface; magnified 24 diameters.

Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 35 diameters.





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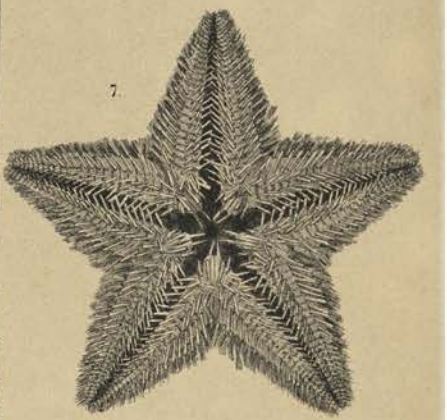

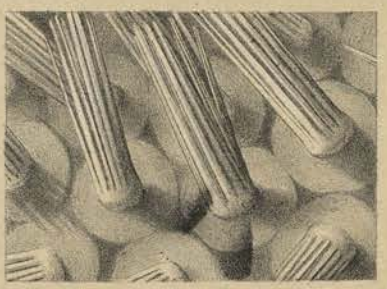

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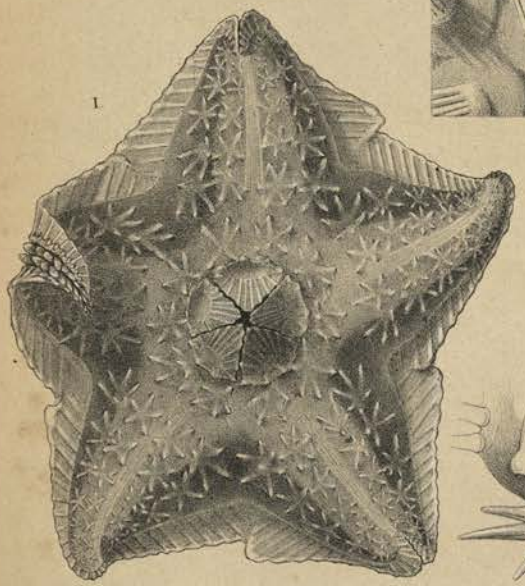

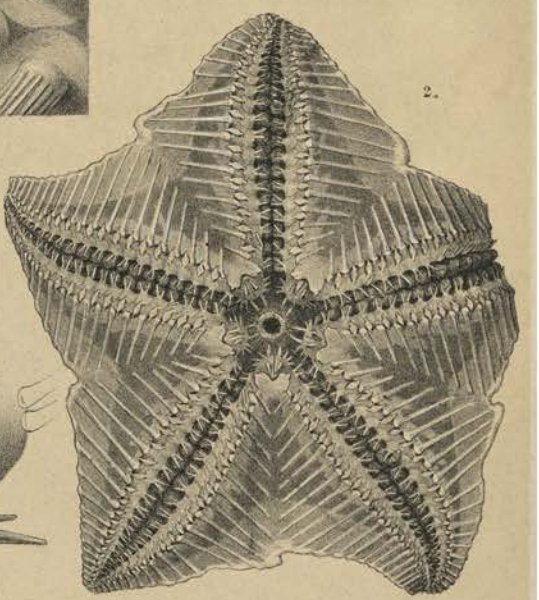

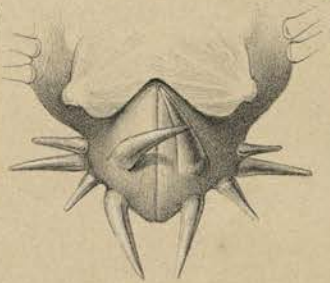

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1–5. HYMENASTER PELLUCIDUS, Wyville Thomson. 6–9. KORETHRASTER HISPIDUS, Wyville Thomson.

PLATE LXXXI.

PLATE LXXXI.

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Figs. 1, 2. HYMENASTER PERGAMENTACEUS, n. sp. . . . 499

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

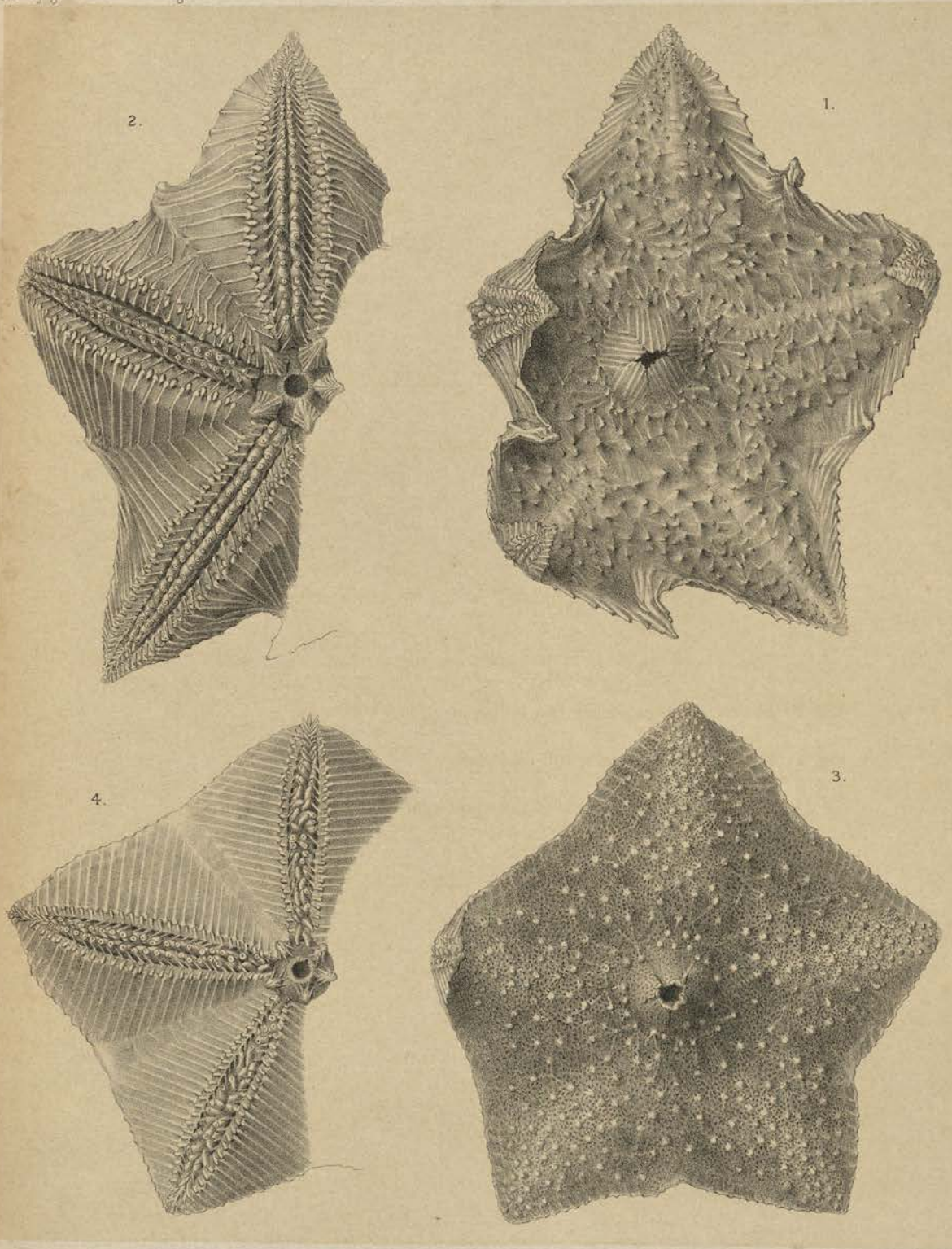
[For magnified details of this species see Pl. LXXXIII. figs. 1–3.]

Figs. 3, 4. HYMENASTER FORMOSUS, n. sp. 497

Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. LXXXIII. figs. 4–6.]



F. H. Michael del.

F. Huth, Lith^r Edin^r

1-2. HYMENASTER PERGAMENTACEUS, n. sp. 3-4. HYMENASTER FORMOSUS, n. sp.

PLATE LXXXII.

PLATE LXXXII.

Page

Figs. 1, 2. HYMENASTER ECHINULATUS, n. sp. . . . 502

Fig. 1. Abactinal aspect; magnified 3 diameters.

Fig. 2. Actinal aspect; magnified 3 diameters.

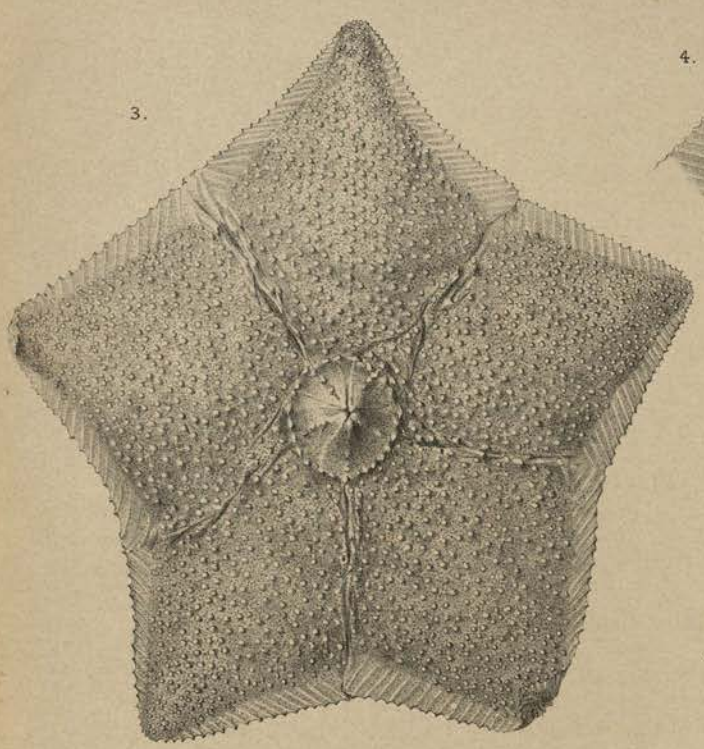
[For magnified details of this species see Pl. LXXXIII. figs. 7–9.]

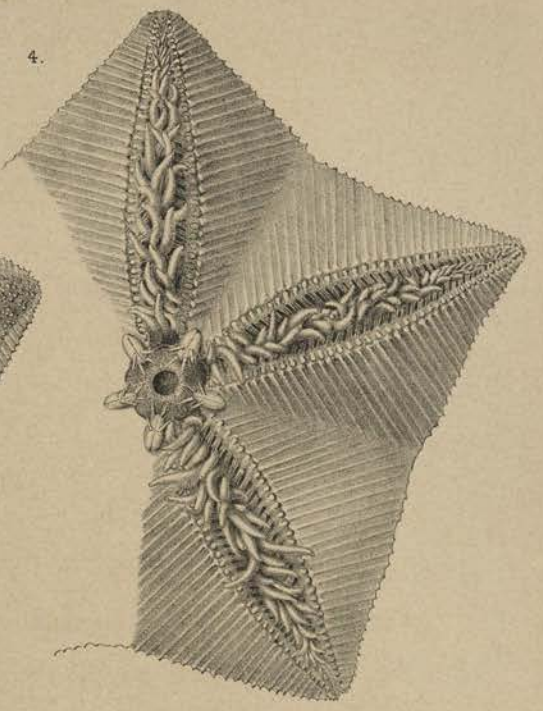
Figs. 3, 4. HYMENASTER POROSISSIMUS, n. sp. . . . 515

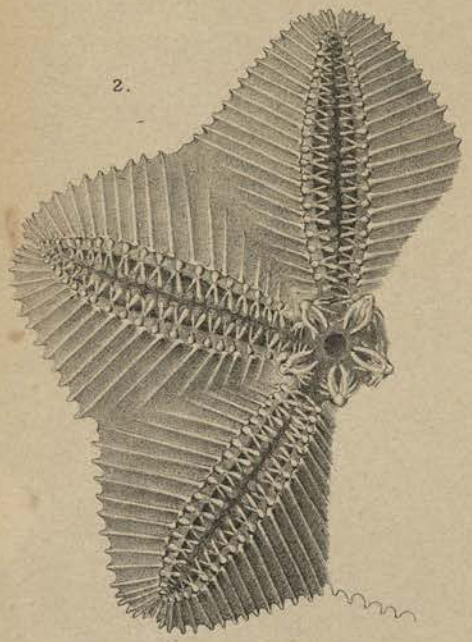
Fig. 3. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

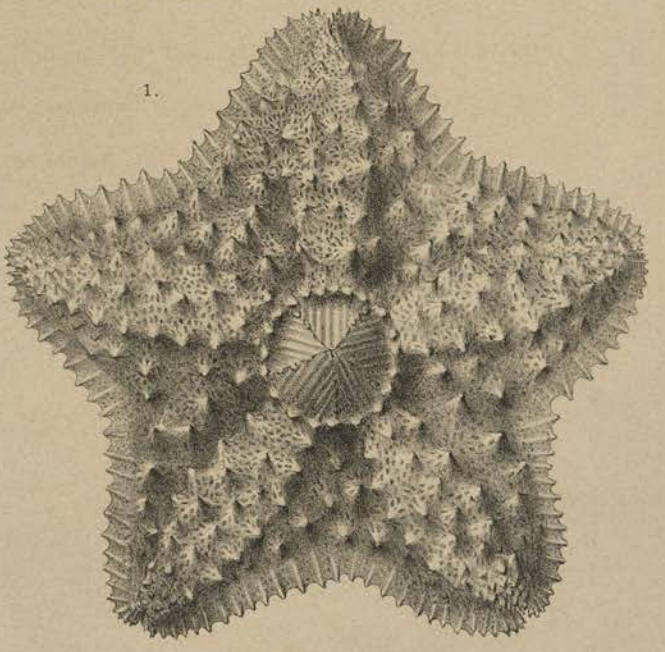
Fig. 4. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

[For magnified details of this species see Pl. LXXXIII. figs. 10–12.]









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1-2. HYMENASTER ECHINULATUS, n. sp. 3-4. HYMENASTER POROSISSIMUS, n. sp.

PLATE LXXXIII.

PLATE LXXXIII.

Page

Figs. 1–3. HYMENASTER PERGAMENTACEUS, n. sp. . . . 499

Fig. 1. A portion of the supradorsal membrane; magnified 10 diameters.

Fig. 2. Mouth-plates; magnified.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 7 diameters.

[For macroscopic figures of this species see Pl. LXXXI. figs. 1, 2.]

Figs. 4–6. HYMENASTER FORMOSUS, n. sp. . . . 497

Fig. 4. A portion of the supradorsal membrane; magnified 16 diameters.

Fig. 5. Mouth-plates; magnified.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. LXXXI. figs. 3, 4.]

Figs. 7–9. HYMENASTER ECHINULATUS, n. sp. . . . 502

Fig. 7. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 8. Mouth-plates; magnified.

Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 16 diameters.

[For macroscopic figures of this species see Pl. LXXXII. figs. 1, 2.]

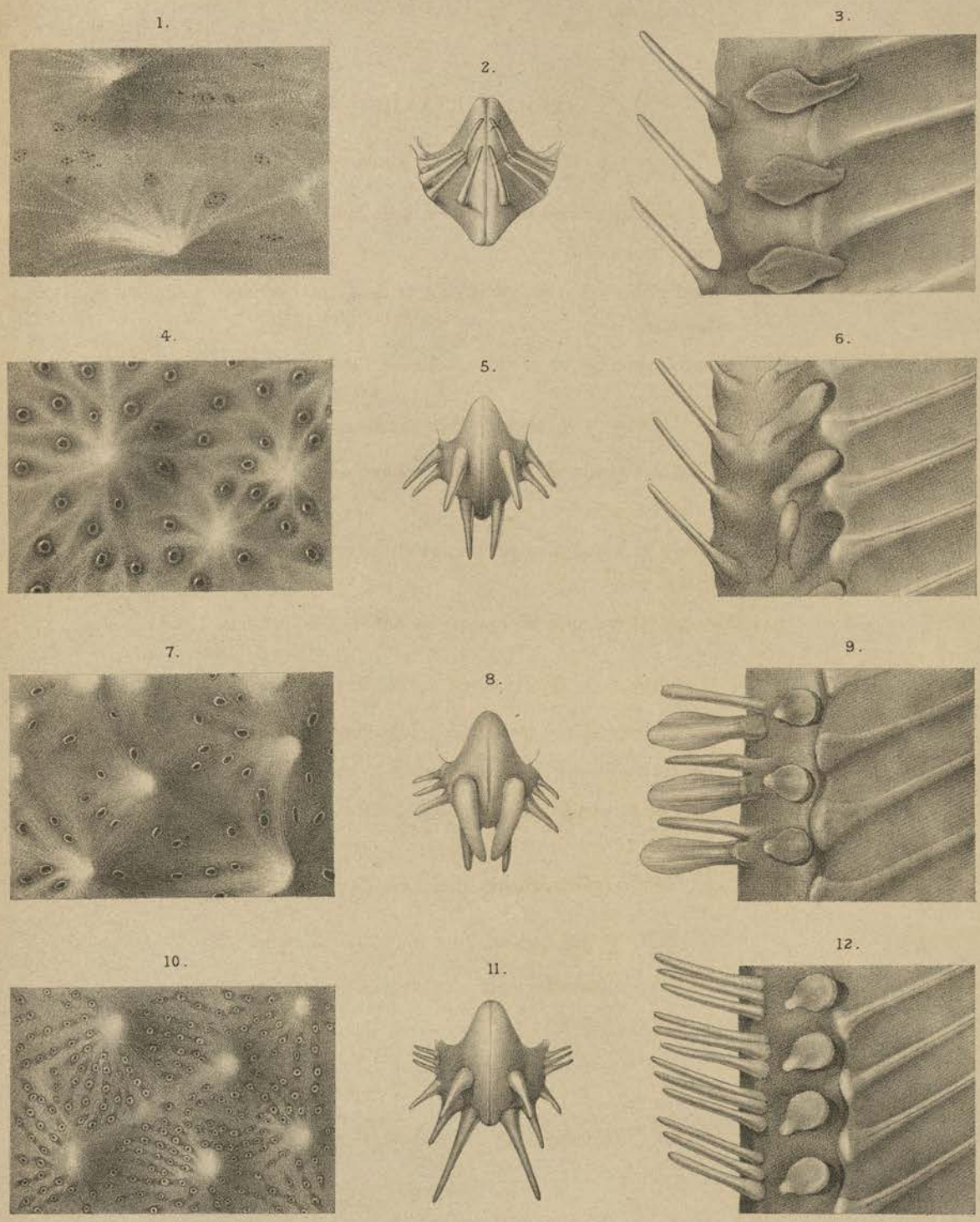
Figs. 10–12. HYMENASTER POROSISSIMUS, n. sp. . . . 515

Fig. 10. A portion of the supradorsal membrane; magnified 10 diameters.

Fig. 11. Mouth-plates; magnified.

Fig. 12. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For macroscopic figures of this species see Pl. LXXXII. figs. 3, 4.]



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1-3. HYMENASTER PERGAMENTACEUS, n. sp. 4-6. HYMENASTER FORMOSUS, n. sp.
7-9. HYMENASTER ECHINULATUS, n. sp. 10-12. HYMENASTER POROSISSIMUS, n. sp.

PLATE LXXXIV.

PLATE LXXXIV.

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Figs. 1, 2. HYMENASTER GLAUCUS, n. sp. 505

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

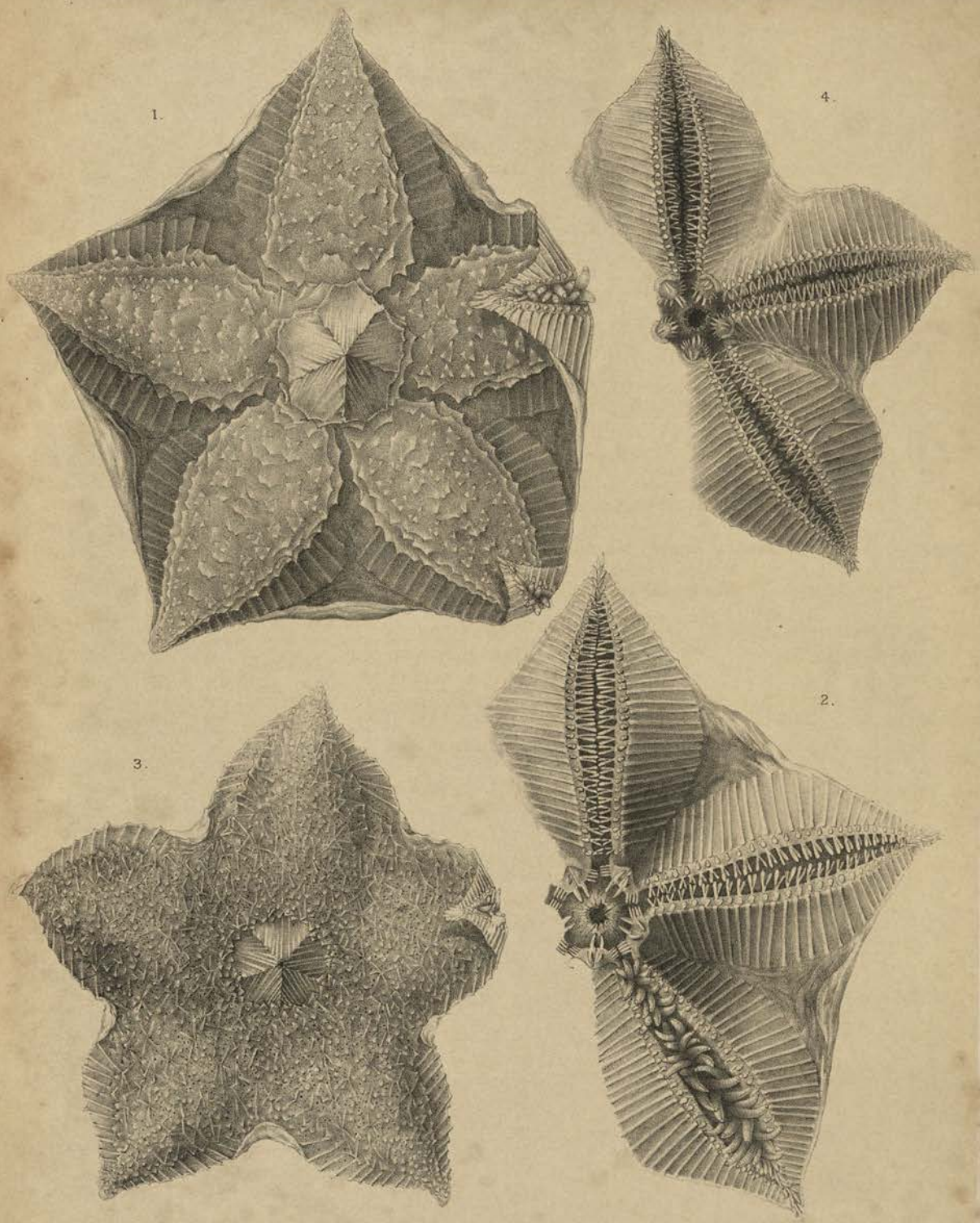
[For magnified details of this species see Pl. LXXXVI. figs. 4–6.]

Figs. 3, 4. HYMENASTER VICARIUS, n. sp. . . . 507

Fig. 3. Abactinal aspect; magnified 1½ diameters.

Fig. 4. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. LXXXVI. figs. 1–3.]



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F. Huth, Lith^r Edin^r

1-2. HYMENASTER GLAUCUS, n. sp. 3-4. HYMENASTER VICARIUS, n. sp.

PLATE LXXXV.

PLATE LXXXV.

Page

Figs. 1–3. HYMENASTER SACCULATUS, n. sp. . . . 501

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 3. Profile view of a small example; magnified $1\frac{1}{2}$ diameters.

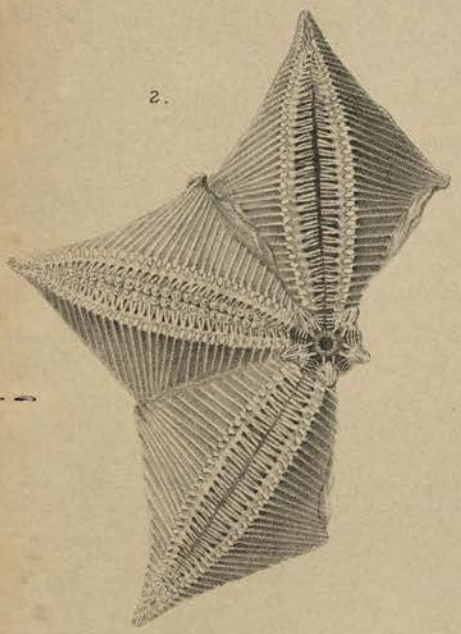
[For magnified details of this species see Pl. LXXXVI. figs. 7–9.]

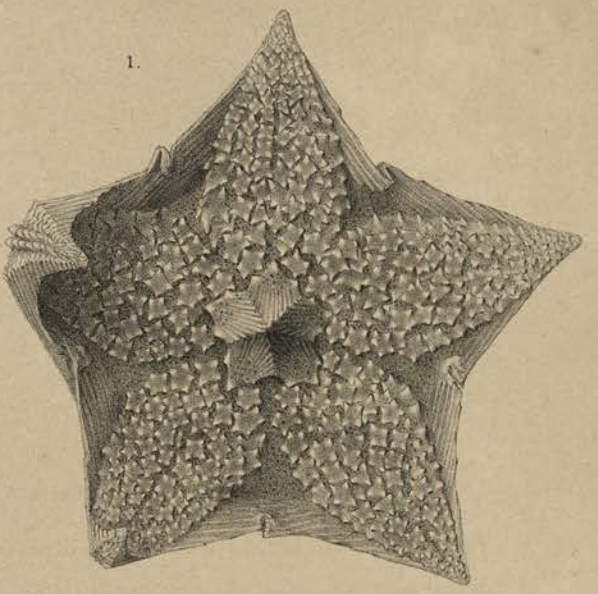
Figs. 4, 5. HYMENASTER CÆLATUS, n. sp. . . . 509

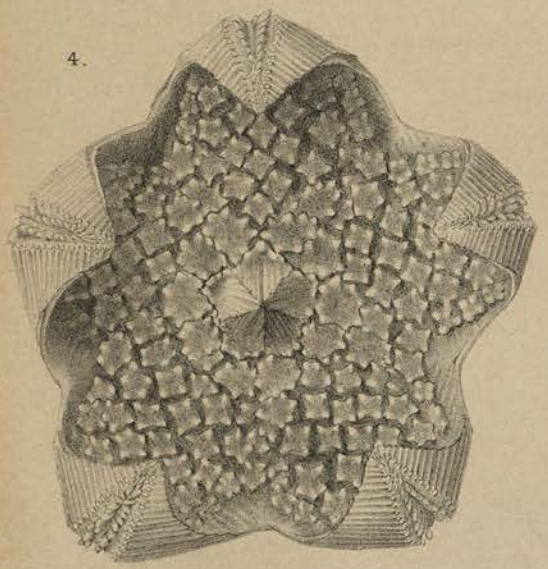
Fig. 4. Abactinal aspect; magnified 2 diameters.

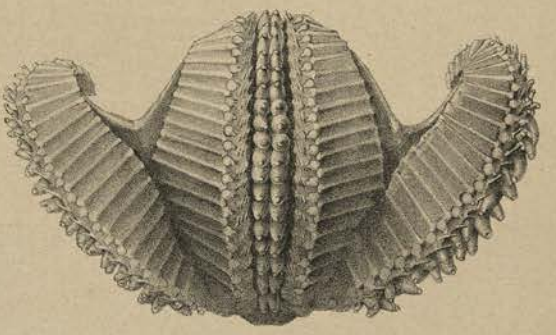
Fig. 5. Profile view of the same; magnified 2 diameters.

[For magnified details of this species see Pl. LXXXVI. figs. 10–12.]









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1-3. HYMENASTER SACCULATUS, n. sp. 4-5. HYMENASTER CÆLATUS, n. sp.

PLATE LXXXVI.

PLATE LXXXVI.

Page

Figs. 1–3. HYMENASTER VICARIUS, n. sp. . . . 507

Fig. 1. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 2. Mouth-plates; magnified.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For macroscopic figures of this species see Pl. LXXXIV. figs. 3, 4.]

Figs. 4–6. HYMENASTER GLAUCUS, n. sp. . . . 505

Fig. 4. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 5. Mouth-plates; magnified.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. LXXXIV. figs. 1, 2.]

Figs. 7–9. HYMENASTER SACCULATUS, n. sp. . . . 501

Fig. 7. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 8. Mouth-plates; magnified.

Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For macroscopic figures of this species see Pl. LXXXV. figs. 1–3.]

Figs. 10–12. HYMENASTER CÆLATUS, n. sp. . . . 509

Fig. 10. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 11. Mouth-plates; magnified.

Fig. 12. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For macroscopic figures of this species see Pl. LXXXV. figs. 4, 5.]

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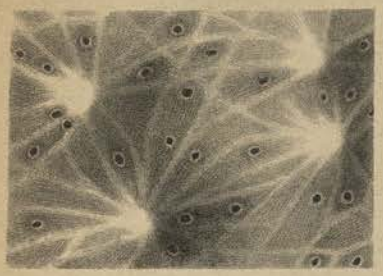

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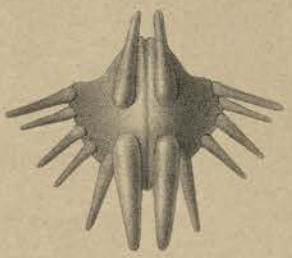

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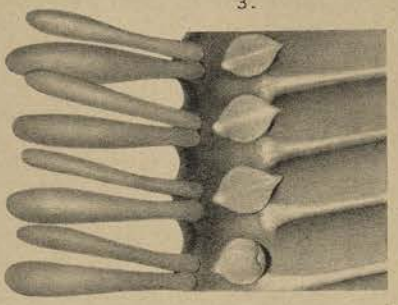

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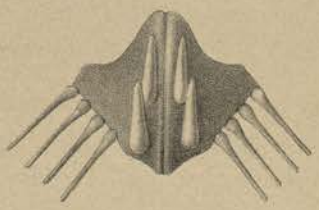

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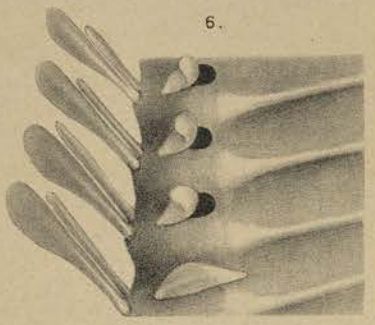

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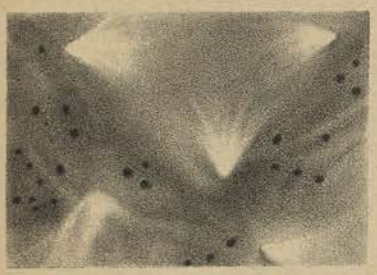

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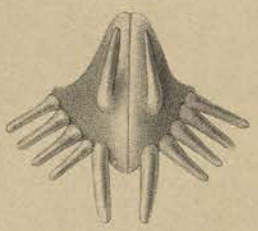

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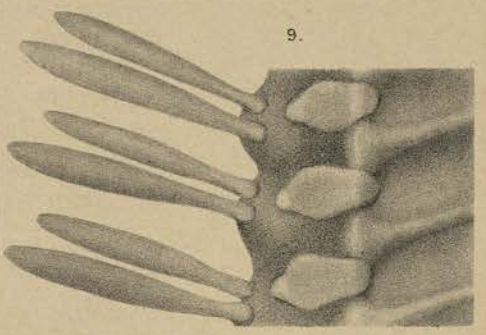

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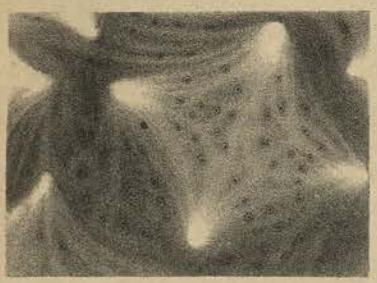

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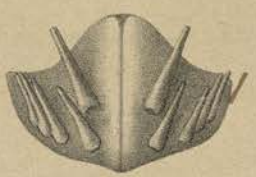

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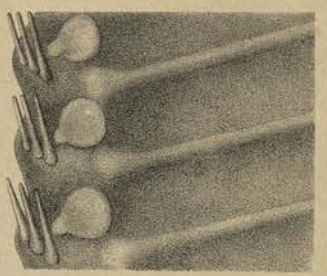

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1-3. HYMENASTER VICARIUS, n.sp. 4-6. HYMENASTER GLAUCUS, n.sp. 7-9. HYMENASTER SACCULATUS, n.sp.
10-12. HYMENASTER CÆLATUS, n.sp.

PLATE LXXXVII.

PLATE LXXXVII.

Page

Figs. 1–3. HYMENASTER NOBILIS, Wyville Thomson, . . 495

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 3 diameters.

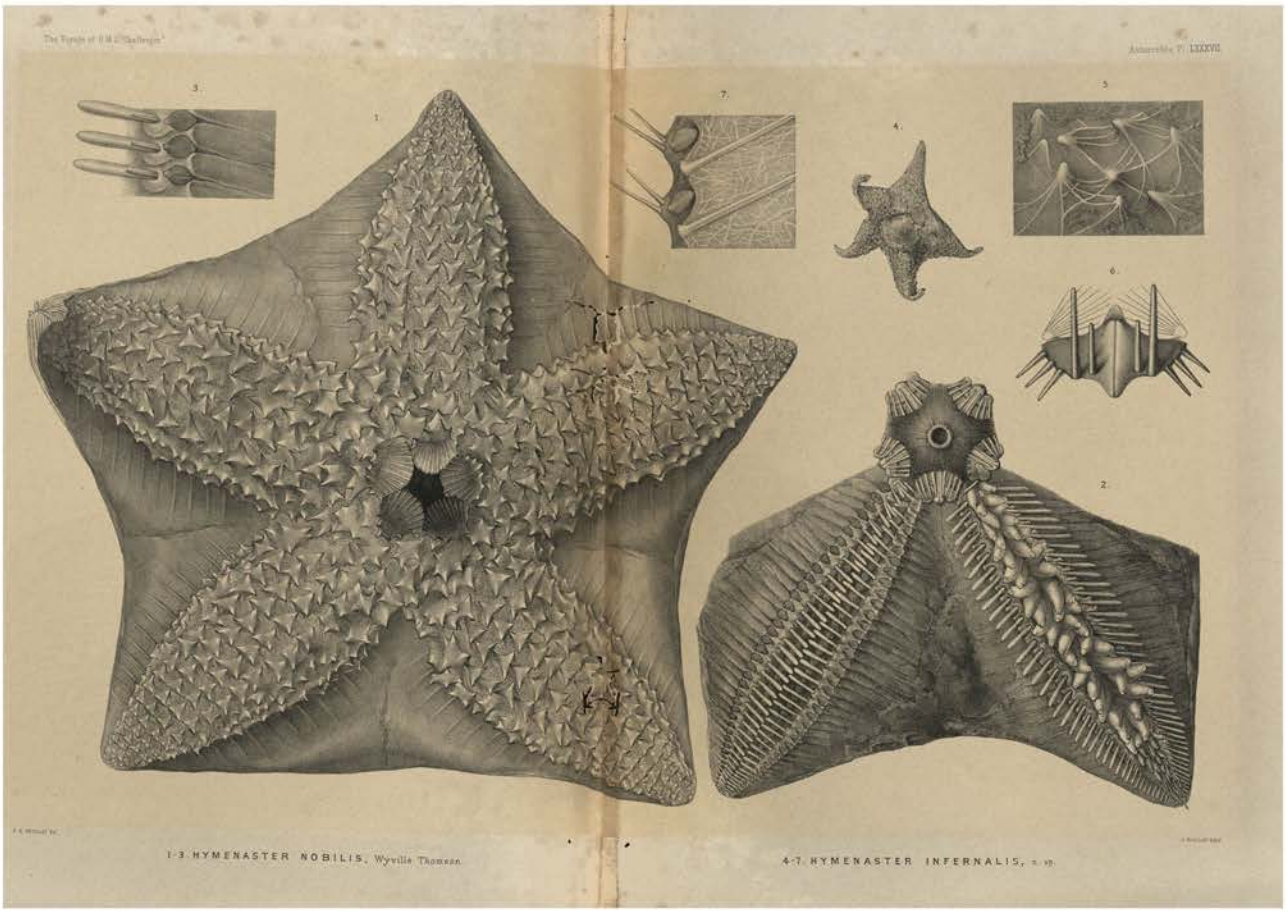
Figs. 4–7. HYMENASTER INFERNALIS, n. sp. . . . 508

Fig. 4. Abactinal aspect; natural size.

Fig. 5. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 6. Mouth-plates; magnified.

Fig. 7. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.



1-3. HYMENASTER NOBILIS, Wyville Thomson.

4-7. HYMENASTER INFERNALIS, n. sp.

PLATE LXXXVIII.

PLATE LXXXVIII.

Page

Figs. 1–5. HYMENASTER CARNOSUS, n. sp. 504

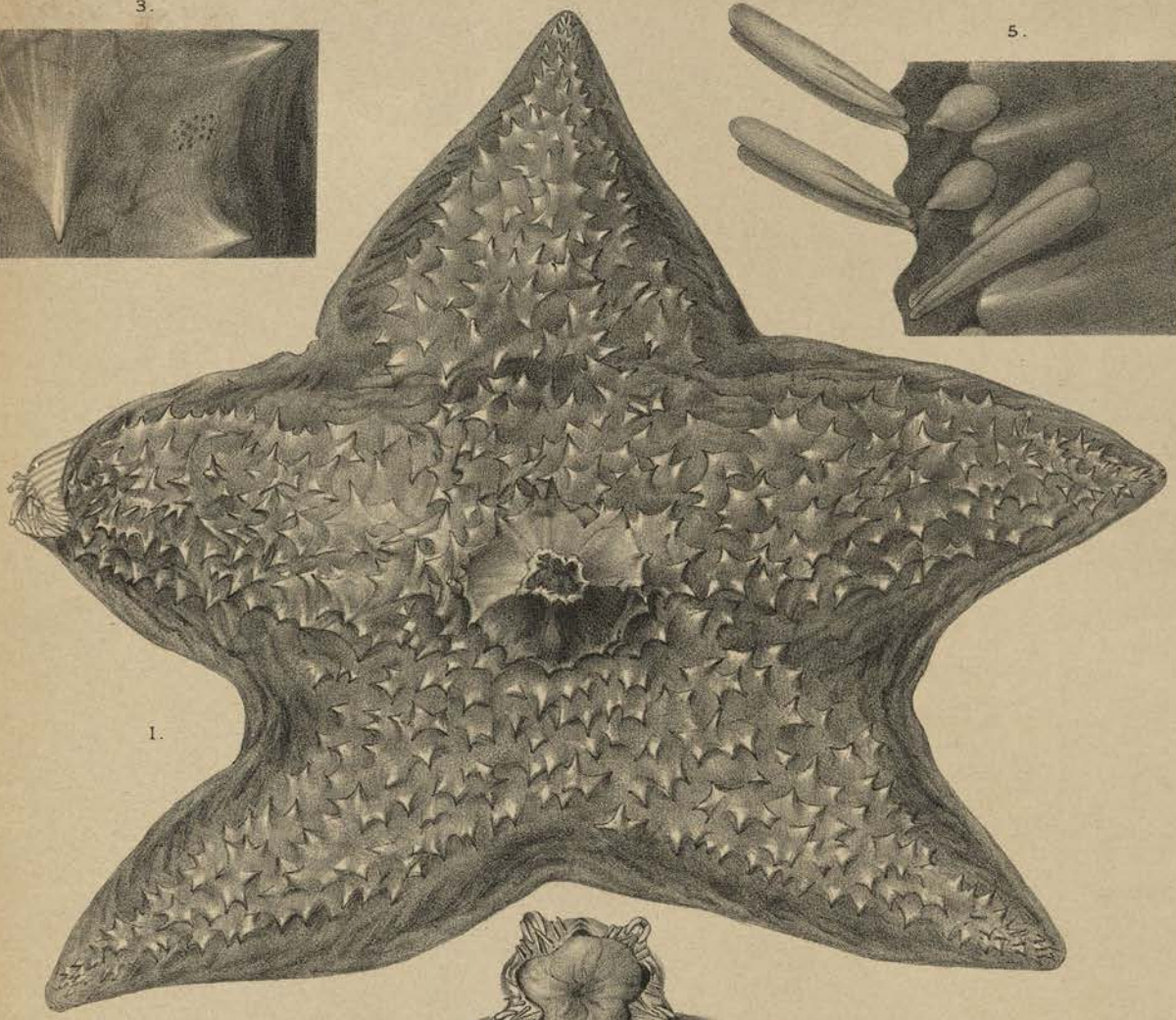
Fig. 1. Abactinal aspect; natural size.

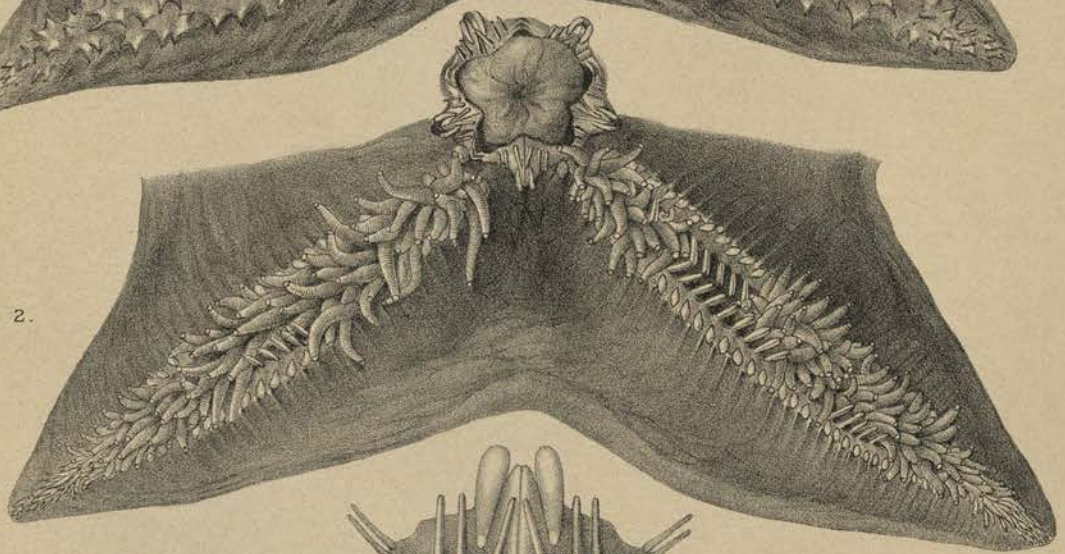
Fig. 2. Actinal aspect; natural size.

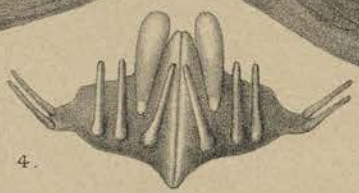
Fig. 3. A portion of the supradorsal membrane; magnified 8 diameters.

Fig. 4. Mouth-plates; magnified.

Fig. 5. Adambulacral plates and adjacent portion of the actinal surface; magnified 4 diameters.







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HYMENASTER CARNOSUS, *n. sp.*

PLATE LXXXIX.

PLATE LXXXIX.

Page

Figs. 1, 2. HYMENASTER CRUCIFER, n. sp. . . . 511

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

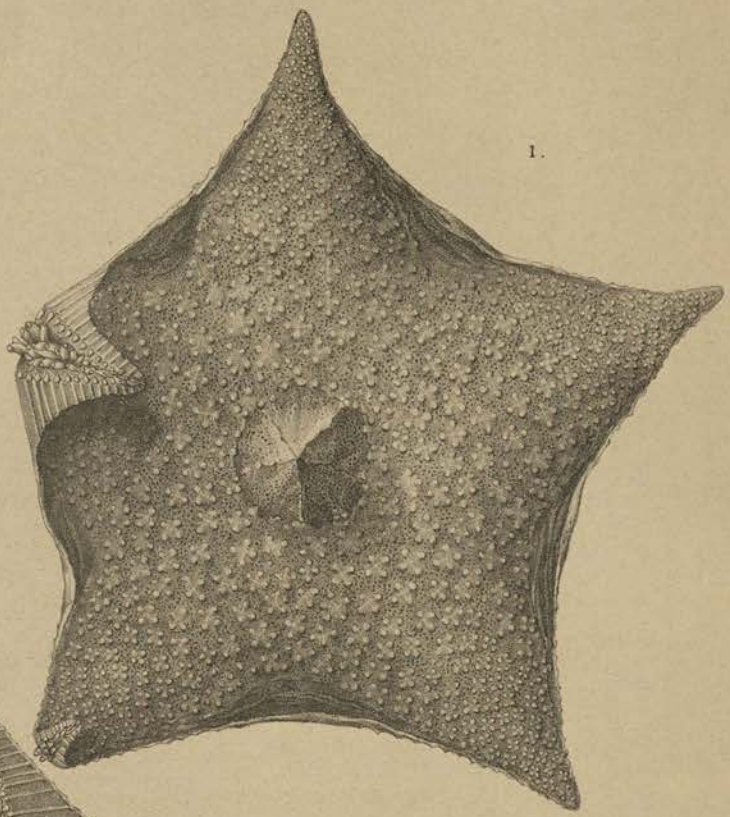
[For magnified details of this species see Pl. XCI. figs. 1–3.]

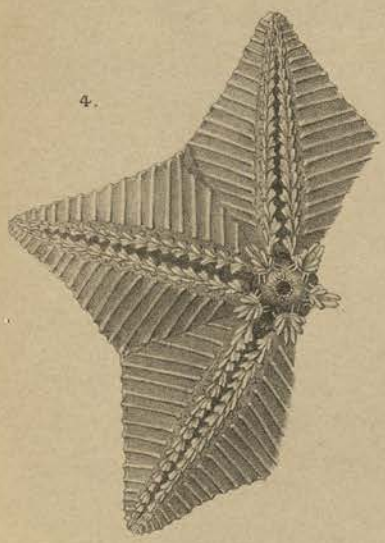
Figs. 3, 4. HYMENASTER ANOMALUS, n. sp. . . . 512

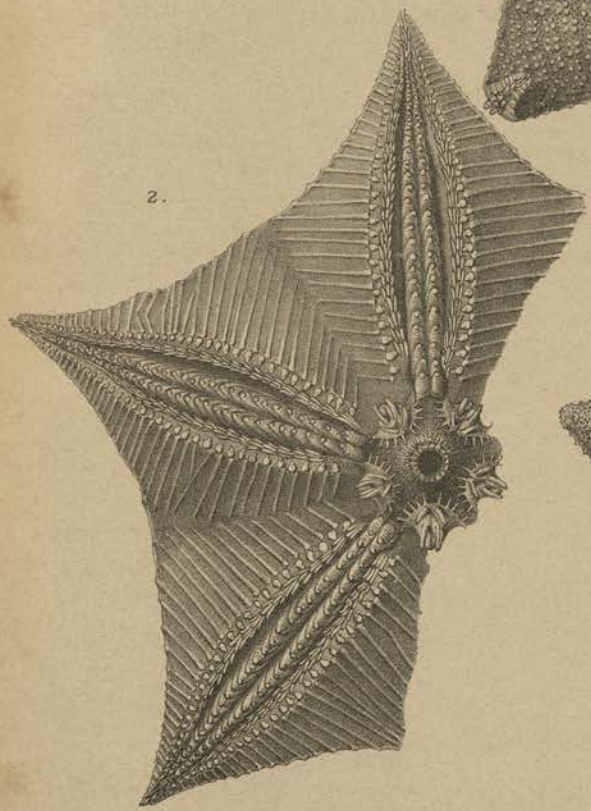
Fig. 3. Abactinal aspect; magnified 3 diameters.

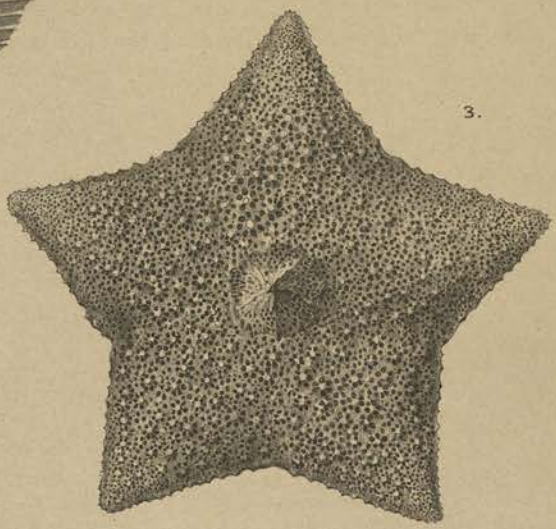
Fig. 4. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. XCI. figs. 4–6.]









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1-2. HYMENASTER CRUCIFER, n.sp. 3-4. HYMENASTER ANOMALUS, n.sp.

PLATE XC.

PLATE XC.

Page

Figs. 1, 2. HYMENASTER GRANIFERUS, n. sp. . . . 517

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

[For magnified details of this species see Pl. XCI. figs. 7–9.]

Figs. 3, 4. HYMENASTER COCCINATUS, n. sp. . . . 522

Fig. 3. Abactinal aspect; magnified 3 diameters.

Fig. 4. Actinal aspect; magnified 3 diameters.

[For magnified details of this species see Pl. XCI. figs. 10–12.]

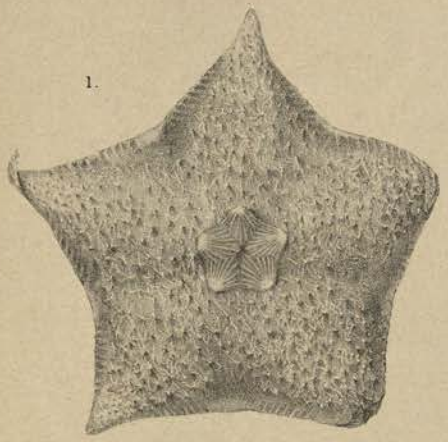
Figs. 5, 6. HYMENASTER PRÆCOQUIS, n. sp. 524

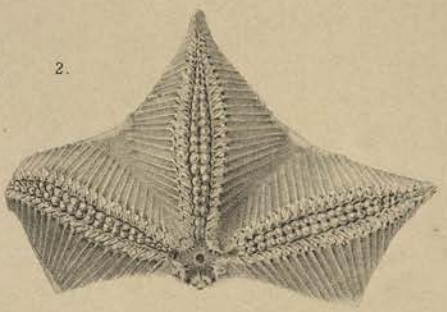
Fig. 5. Abactinal aspect; magnified 4 diameters.

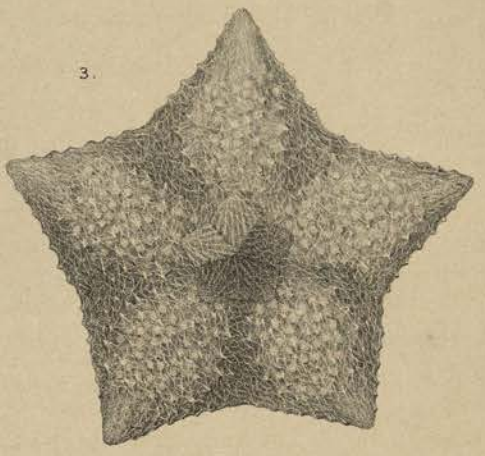
Fig. 6. Actinal aspect; magnified 4 diameters.

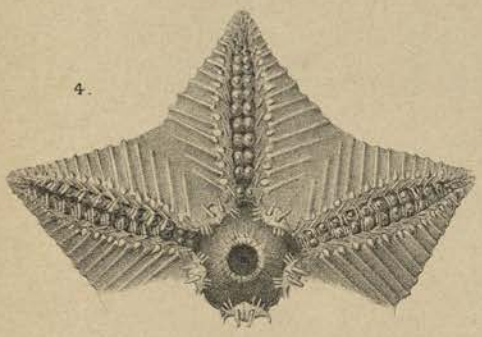
(The young contained in the nidamental cavity may be seen through the membrane, and are exposed at the rent in one of the interradial areas.)

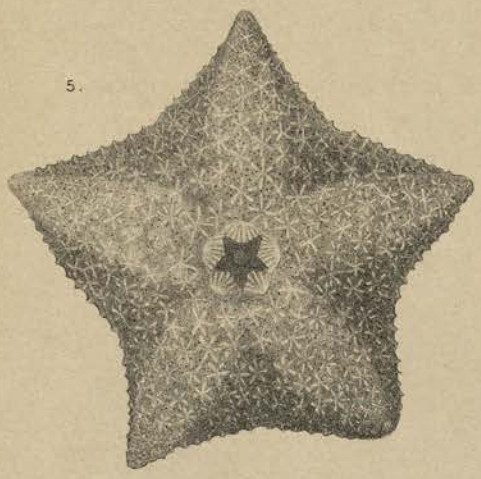
[For magnified details of this species see Pl. XCI. figs. 13–15.]

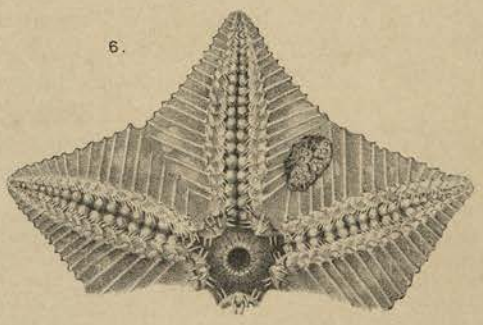












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1-2. HYMENASTER GRANIFERUS, n.sp. 3-4. HYMENASTER COCCINATUS, n.sp.
5-6. HYMENASTER PRÆCOQUIS, n.sp.

PLATE XCI.

PLATE XCI.

Page

Figs. 1–3. HYMENASTER CRUCIFER, n. sp. . . . 511

Fig. 1. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 2. Mouth-plates; magnified.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 5 diameters.

[For macroscopic figures of this species see Pl. LXXXIX. figs. 1, 2.]

Figs. 4–6. HYMENASTER ANOMALUS, n. sp. . . . 512

Fig. 4. A portion of the supradorsal membrane; magnified 30 diameters.

Fig. 5. Mouth-plates; magnified.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. LXXXIX. figs. 3, 4.]

Figs. 7–9. HYMENASTER GRANIFERUS, n. sp. . . . 517

Fig. 7. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 8. Mouth-plates; magnified.

Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. XC. figs. 1, 2.]

Figs. 10–12. HYMENASTER COCCINATUS, n. sp. . . . 522

Fig. 10. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 11. Mouth-plates; magnified.

Fig. 12. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XC. figs. 3, 4.]

Figs. 13–15. HYMENASTER PRÆCOQUIS, n. sp. . . . 524

Fig. 13. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 14. Mouth-plates; magnified.

Fig. 15. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XC. figs. 5, 6.]

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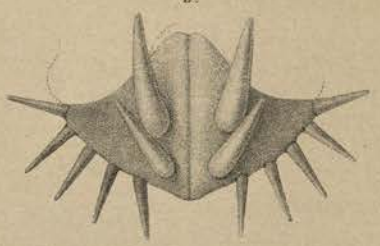

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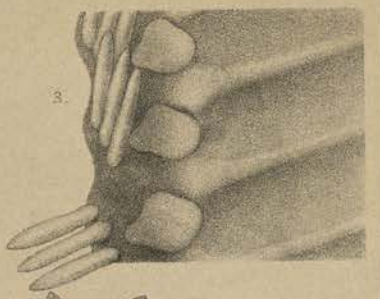

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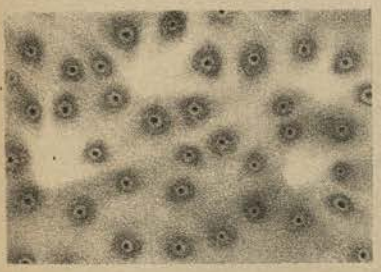

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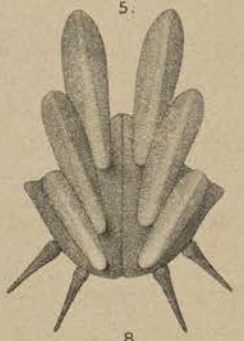

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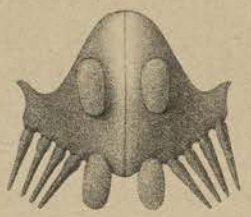

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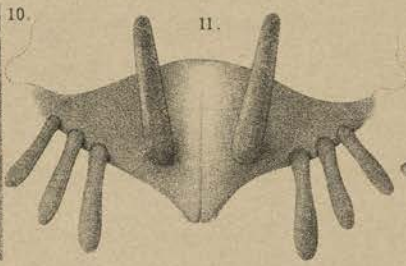

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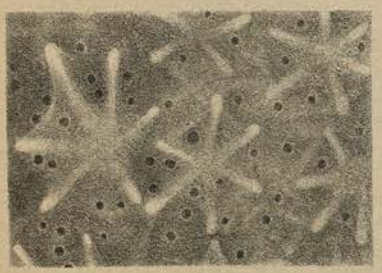

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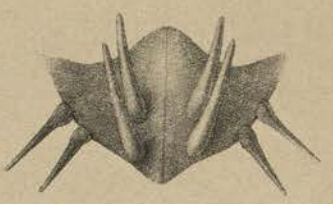

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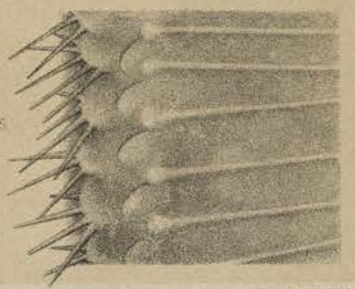


15.

F. H. Michael del.

F. Huth, Lith^r Edin^r

1-3. HYMENASTER CRUCIFER, n.sp. 4-6. HYMENASTER ANOMALUS, n.sp. 7-9. HYMENASTER GRANIFERUS, n.sp.
10-12. HYMENASTER COCCINATUS, n.sp. 13-15. HYMENASTER PRÆCOQUIS, n.sp.

PLATE XCII.

PLATE XCII.

Page

Fig. 1. HYMENASTER PULLATUS, n. sp. 519

Fig. 1. Abactinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XCIII. figs. 1–3.]

Figs. 2, 3. HYMENASTER GEOMETRICUS, n. sp. . . . 518

Fig. 2. Abactinal aspect; magnified 1½ diameters.

Fig. 3. Profile view, showing the actinal interradial area (partly diagrammatic); magnified 1½ diameters.

[For magnified details of this species see Pl. XCIII. figs. 4–6.]

Figs. 4, 5. HYMENASTER LATEBROSUS, n. sp. . . . 514

Fig. 4. Abactinal aspect; magnified 2 diameters.

Fig. 5. Actinal aspect; magnified 2 diameters.

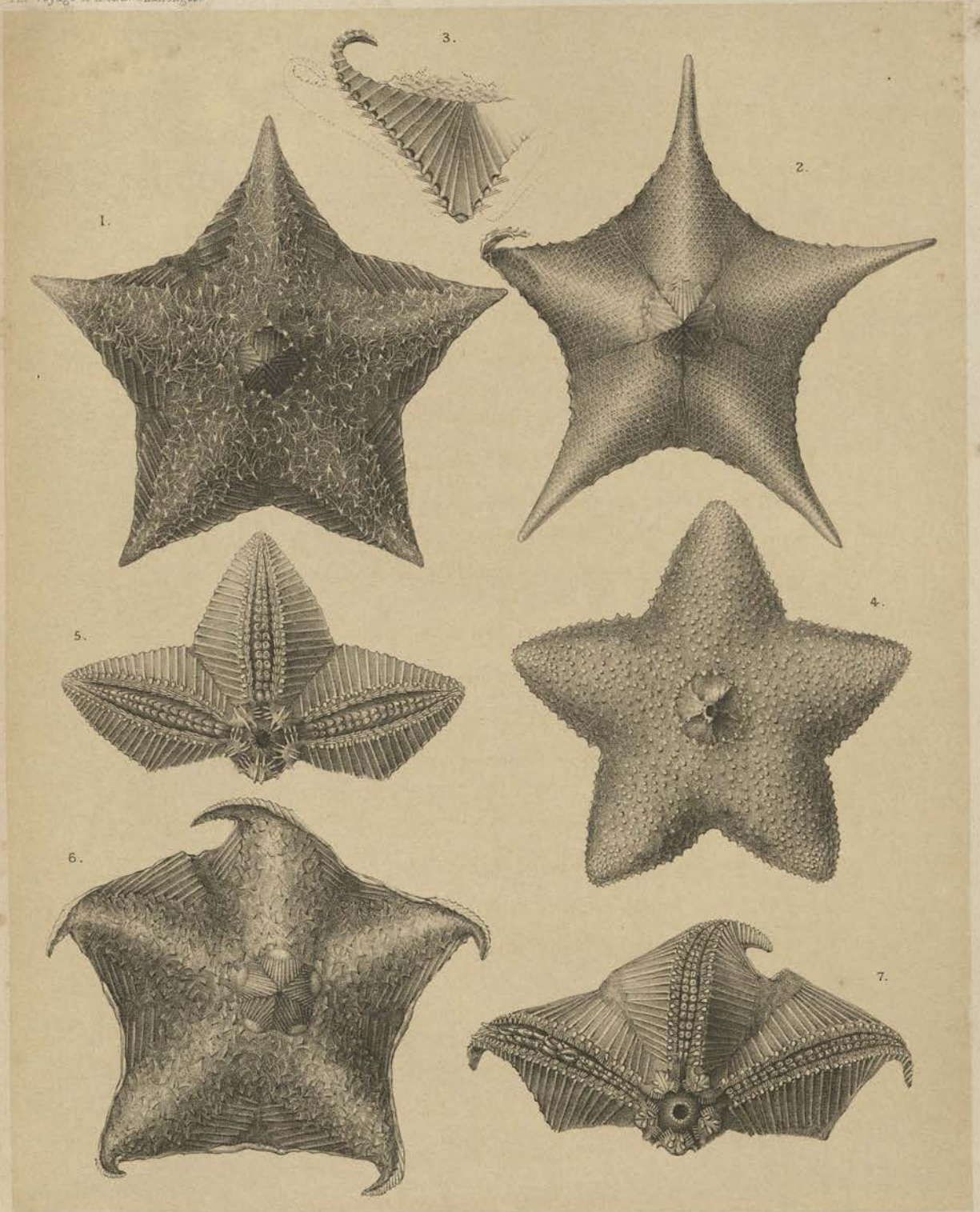
[For magnified details of this species see Pl. XCIII. figs. 7–9.]

Figs. 6, 7. HYMENASTER MEMBRANACEUS, Wyville Thomson, . . 521

Fig. 6. Abactinal aspect; magnified 1½ diameters.

Fig. 7. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. XCIII. figs. 10–12.]



F.H. Michael del. F. Huth, Lith^r. Edin^r.

1. HYMENASTER PULLATUS, n. sp. 2-3. HYMENASTER GEOMETRICUS, n. sp.
4-5. HYMENASTER LATEBROSUS, n. sp. 6-7. HYMENASTER MEMBRANACEUS, Wyville Thomson.

PLATE XCIII.

PLATE XCIII.

Page

Figs. 1–3. HYMENASTER PULLATUS, n. sp. 519

Fig. 1. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 2. Mouth-plates; magnified.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For a macroscopic figure of this species see Pl. XCII. fig. 1.]

Figs. 4–6. HYMENASTER GEOMETRICUS, n. sp. . . . 518

Fig. 4. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 5. Mouth-plates; magnified.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 5 diameters.

[For macroscopic figures of this species see Pl. XCII. figs. 2, 3.]

Figs. 7–9. HYMENASTER LATEBROSUS, n. sp. . . . 514

Fig. 7. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 8. Mouth-plates; magnified.

Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For macroscopic figures of this species see Pl. XCII. figs. 4, 5.]

Figs. 10–12. HYMENASTER MEMBRANACEUS, Wyville Thomson, 521

Fig. 10. A portion of the supradorsal membrane; magnified 15 diameters.

Fig. 11. Mouth-plates; magnified.

Fig. 12. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

[For macroscopic figures of this species see Pl. XCII. figs. 6, 7.]

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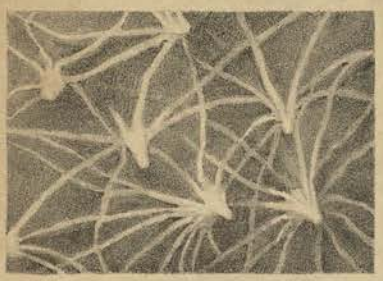

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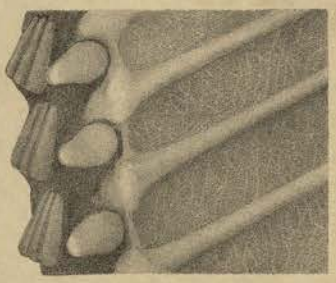

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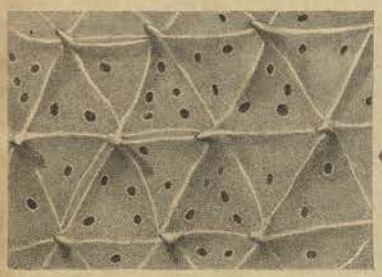

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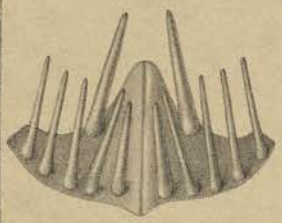

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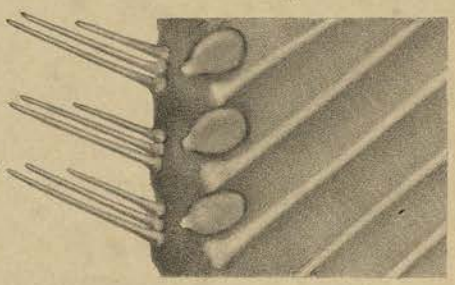

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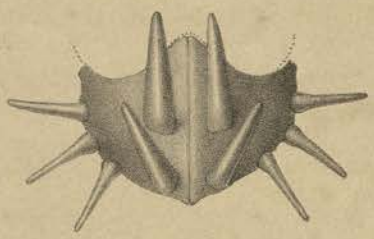

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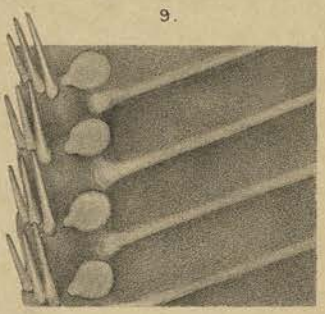

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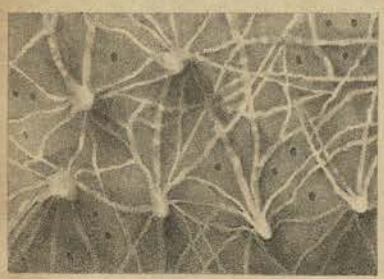

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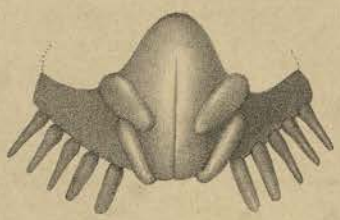

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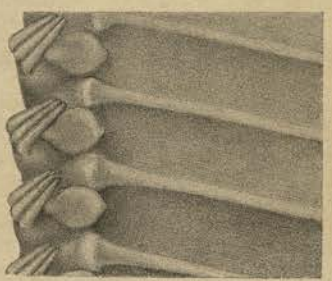


F.H. Michael del.

F. Huth, Lith^r Edin^r

1-3. HYMENASTER PULLATUS, n. sp. 4-6. HYMENASTER GEOMETRICUS, n. sp.
7-9. HYMENASTER LATEBROSUS, n. sp. 10-12. HYMENASTER MEMBRANACEUS, Wyville Thomson.

PLATE XCIV.

PLATE XCIV.

Page

Figs. 1–5. BENTHASTER WYVILLE-THOMSONI, n. sp. . . . 527

Fig. 1. Abactinal aspect; magnified 2 diameters.

Fig. 2. Actinal aspect; magnified 2 diameters.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 18 diameters.

Fig. 4. Diagrammatic view of the abactinal paxillæ and rudimentary supradorsal membrane, seen in profile; magnified.

Fig. 5. Diagram of the plates on the outer part of a ray; magnified.

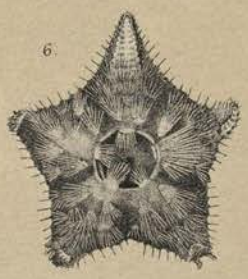
Figs. 6–9. BENTHASTER PENICILLATUS, n. sp. 529

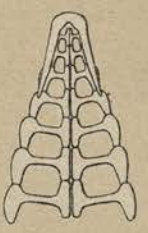
Fig. 6. Abactinal aspect; magnified 2 diameters.

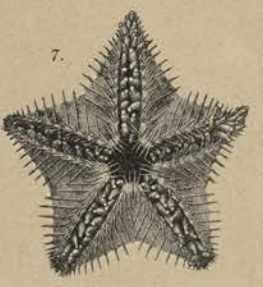
Fig. 7. Actinal aspect; magnified 2 diameters.

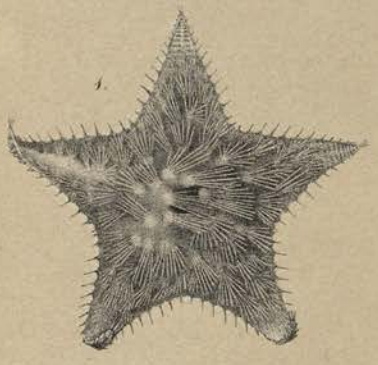
Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified.

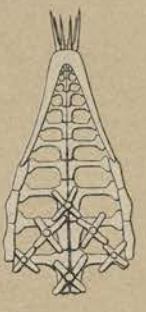
Fig. 9. Diagram of the plates on the outer part of a ray; magnified.

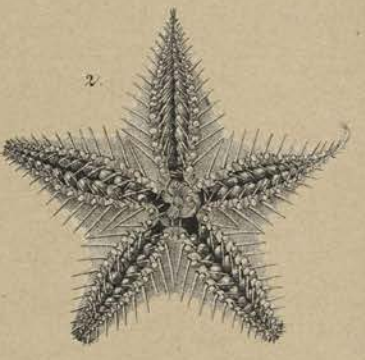


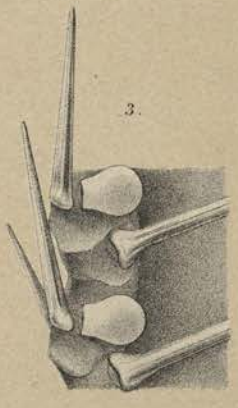


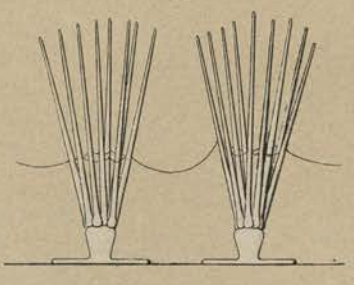


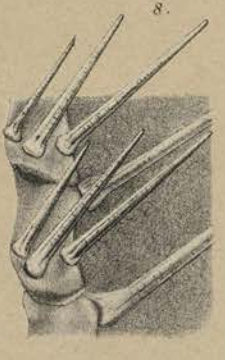












Hanhart imp.

P.H.Michael del. Hollick lith.

1-5. BENTHASTER WYVILLE-THOMSONI, n.sp. 6-9. BENTHASTER PENICILLATUS, n.sp.

PLATE XCV.

PLATE XCV.

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Figs. 1–5. PYTHONASTER MURRAYI, n. sp. . . . 532

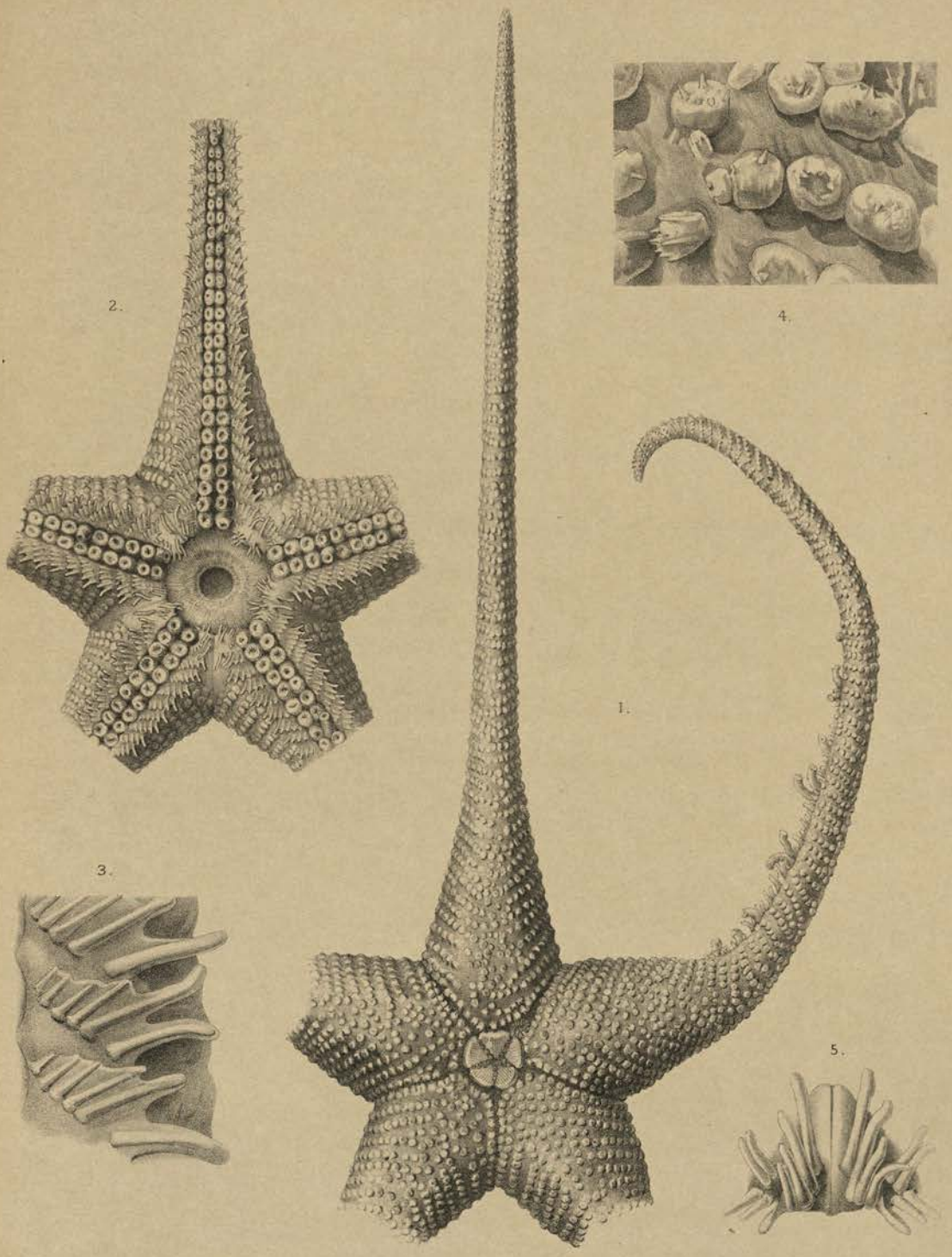
Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 3. Adambulacral plates and adjacent portion of the actinal surface; magnified 9 diameters.

Fig. 4. A portion of the abactinal surface; magnified 9 diameters.

Fig. 5. Mouth-plates; magnified 5 diameters.



P. H. Michael del.

F. Huth, Lith. Edin.

PYTHONASTER MURRAYI, n sp.

PLATE XCVI.

PLATE XCVI.

Page

Figs. 1, 2. CRIBRELLA COMPACTA, n. sp. 543

Fig. 1. Abactinal aspect; magnified 4 diameters.

Fig. 2. Actinal aspect; magnified 4 diameters.

[For magnified details of this species see Pl. XCVIII. figs. 3, 4.]

Figs. 3, 4. CRIBRELLA OBESA, n. sp. 544

Fig. 3. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 4. Profile view of a ray; magnified $1\frac{1}{2}$ diameters.

[For magnified details of this species see Pl. XCVIII. figs. 5, 6.]

Figs. 5, 6. CRIBRELLA SUFFLATA, n. sp. 549

Fig. 5. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

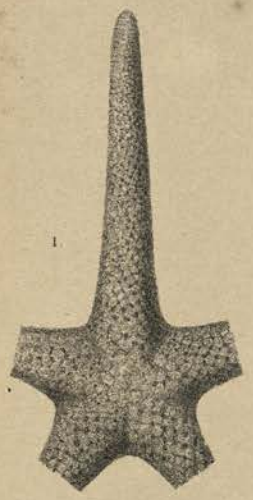
Fig. 6. Profile view of a ray; magnified $1\frac{1}{2}$ diameters.

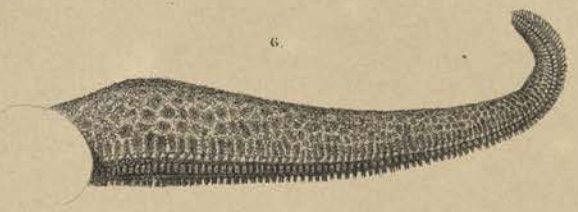
[For magnified details of this species see Pl. XCVIII. figs 1, 2.]

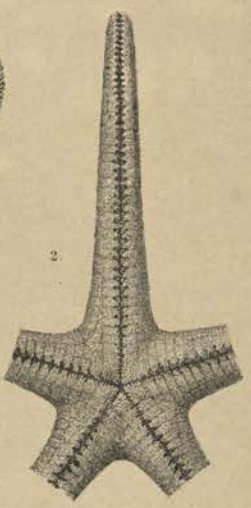
Fig. 7. CRIBRELLA PRÆSTANS, n. sp. 545

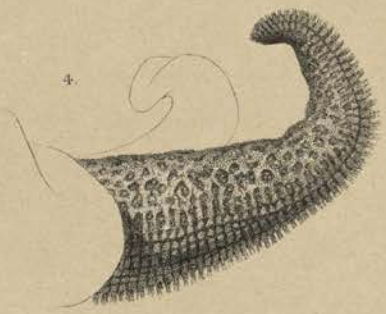
Fig. 7. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

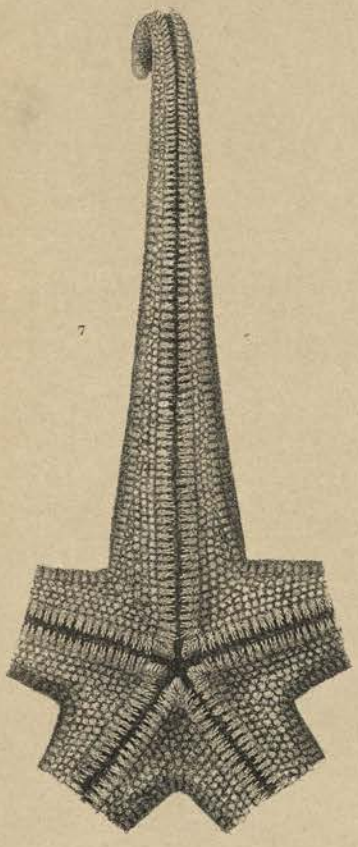
[For magnified details of this species see Pl. XCVIII. figs. 7, 8.]

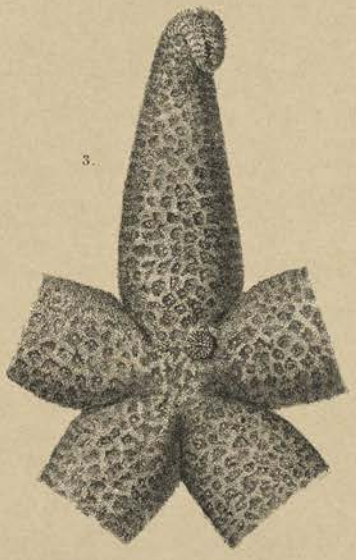


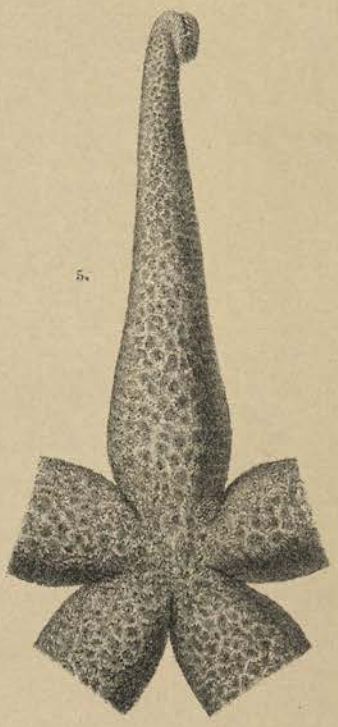












F. H. Michael del. et lith. Mintern Bros. imp.

1–2. CRIBRELLA COMPACTA, n. sp. 3–4. CRIBRELLA OBESA, n. sp.
5–6. CRIBRELLA SUFFLATA, n. sp. 7. CRIBRELLA PRÆSTANS, n. sp.

PLATE XCVII.

PLATE XCVII.

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Figs. 1, 2. PERKNASTER DENSUS, n. sp. 552

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

[For magnified details of this species see Pl. XCVIII. figs. 11, 12.]

Figs. 3, 4. PERKNASTER FUSCUS, n. sp. 551

Fig. 3. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 4. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

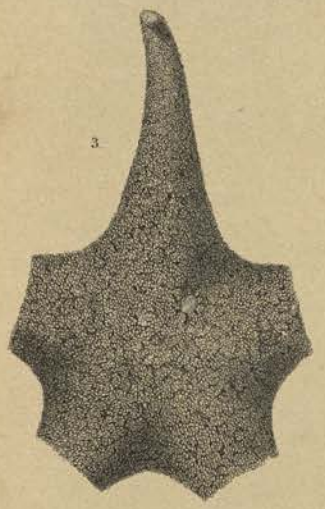
[For magnified details of this species see Pl. LXII. fig. 1.]

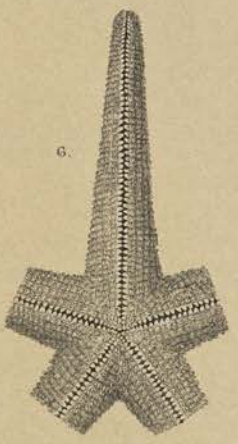
Figs. 5, 6. CRIBRELLA SIMPLEX, n. sp. 547

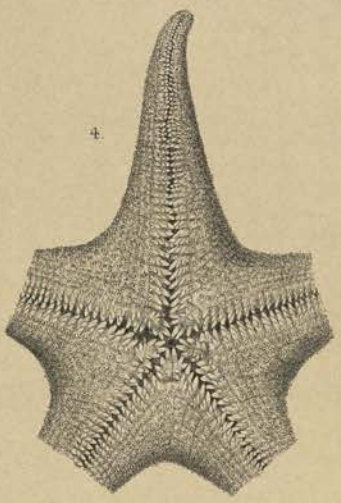
Fig. 5. Abactinal aspect; magnified 2 diameters.

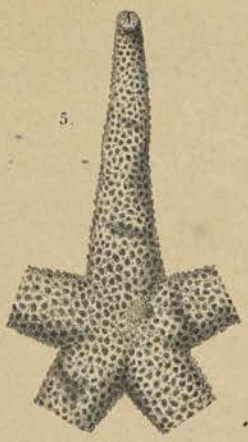
Fig. 6. Actinal aspect; magnified 2 diameters.

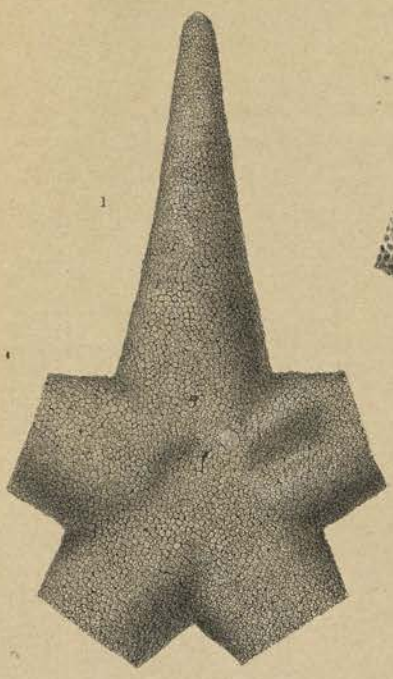
[For magnified details of this species see Pl. XCVIII. figs. 9, 10.]

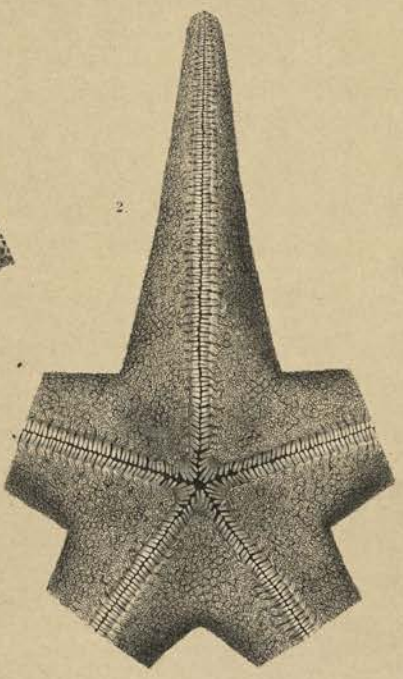












W.H. Crowther del. et lith.

Mintern Bros. imp.

1–2. PERKNASTER DENSUS, n.sp. 3–4. PERKNASTER FUSCUS, n.sp.

5–6. CRIBRELLA SIMPLEX, n.sp.

PLATE XCVIII.

PLATE XCVIII.

Page

Figs. 1, 2. CRIBRELLA SUFFLATA, n. sp. 549

Fig. 1. A portion of the abactinal surface; magnified 12 diameters.

Fig. 2. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XCVI. figs. 5, 6.]

Figs. 3, 4. CRIBRELLA COMPACTA, n. sp. . . . 543

Fig. 3. A portion of the abactinal surface; magnified 35 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 35 diameters.

[For macroscopic figures of this species see Pl. XCVI. figs. 1, 2.]

Figs. 5, 6. CRIBRELLA OBESA, n. sp. 544

Fig. 5. A portion of the abactinal surface; magnified 15 diameters.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. XCVI. figs. 3, 4.]

Figs. 7, 8. CRIBRELLA PRÆSTANS, n. sp. . . . 545

Fig. 7. A portion of the abactinal surface; magnified 16 diameters.

Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified 18 diameters.

[For a macroscopic figure of this species see Pl. XCVI. fig. 7.]

Figs. 9, 10. CRIBRELLA SIMPLEX, n. sp. 547

Fig. 9. A portion of the abactinal surface; magnified 16 diameters.

Fig. 10. Adambulacral plates and adjacent portion of the actinal surface; magnified 20 diameters.

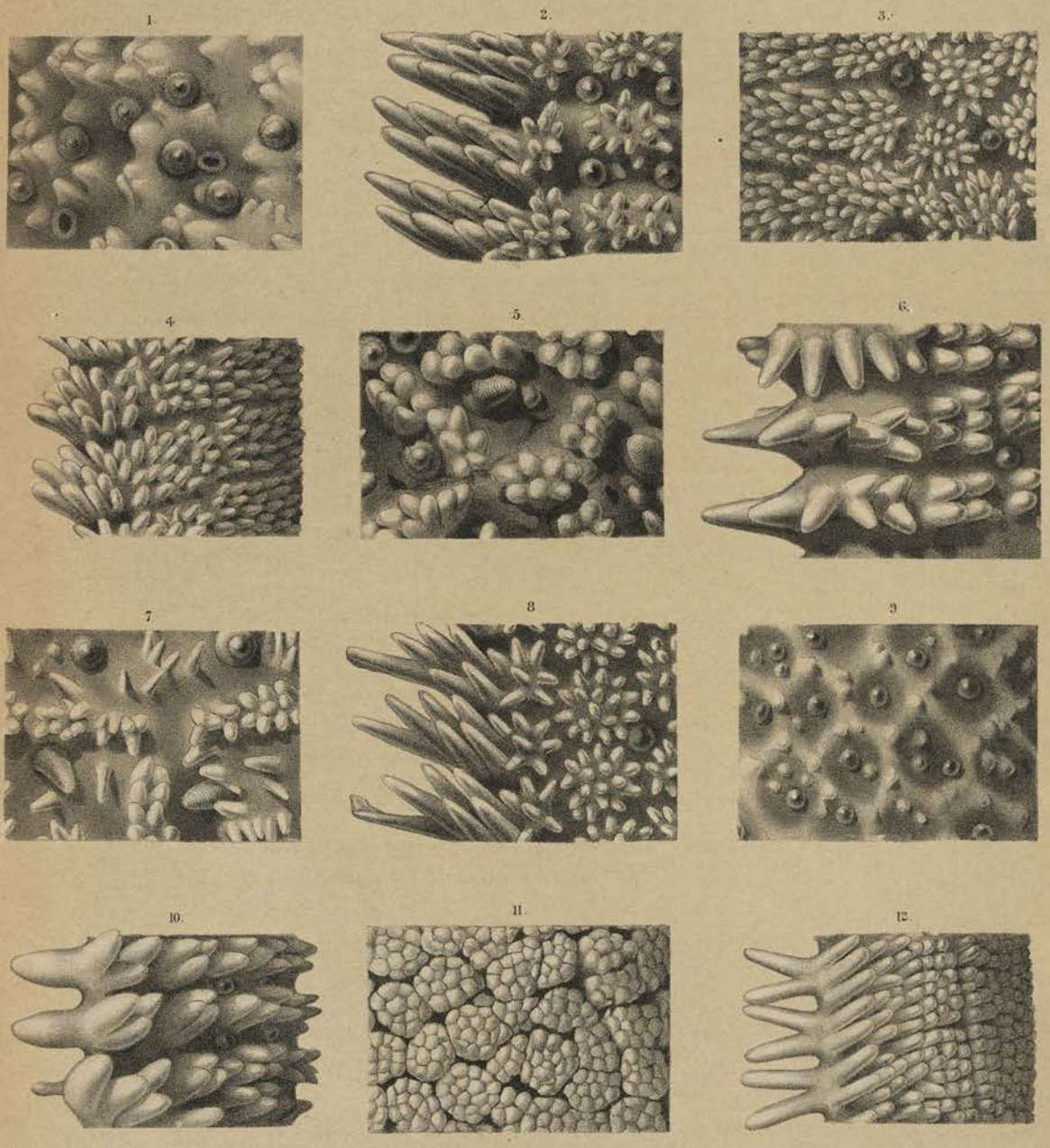
[For macroscopic figures of this species see Pl. XCVII. figs. 5, 6.]

Figs. 11, 12. PERKNASTER DENSUS, n. sp. . . . 552

Fig. 11. A portion of the abactinal surface; magnified 15 diameters.

Fig. 12. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. XCVII. figs. 1, 2.]



P. H. Mitchell del. et lith. Mintern Bros. imp.

1–2. CRIBRELLA SUFFLATA, n. sp.
3–4. CRIBRELLA COMPACTA, n. sp.
5–6. CRIBRELLA OBESA, n. sp.
7–8. CRIBRELLA PRÆSTANS, n. sp.
9–10. CRIBRELLA SIMPLEX, n. sp.
11–12. PERKNASTER DENSUS, n. sp.

PLATE XCIX.

PLATE XCIX.

Page

Figs. 1, 2. ASTERIAS VESICULOSA, n. sp. 568

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

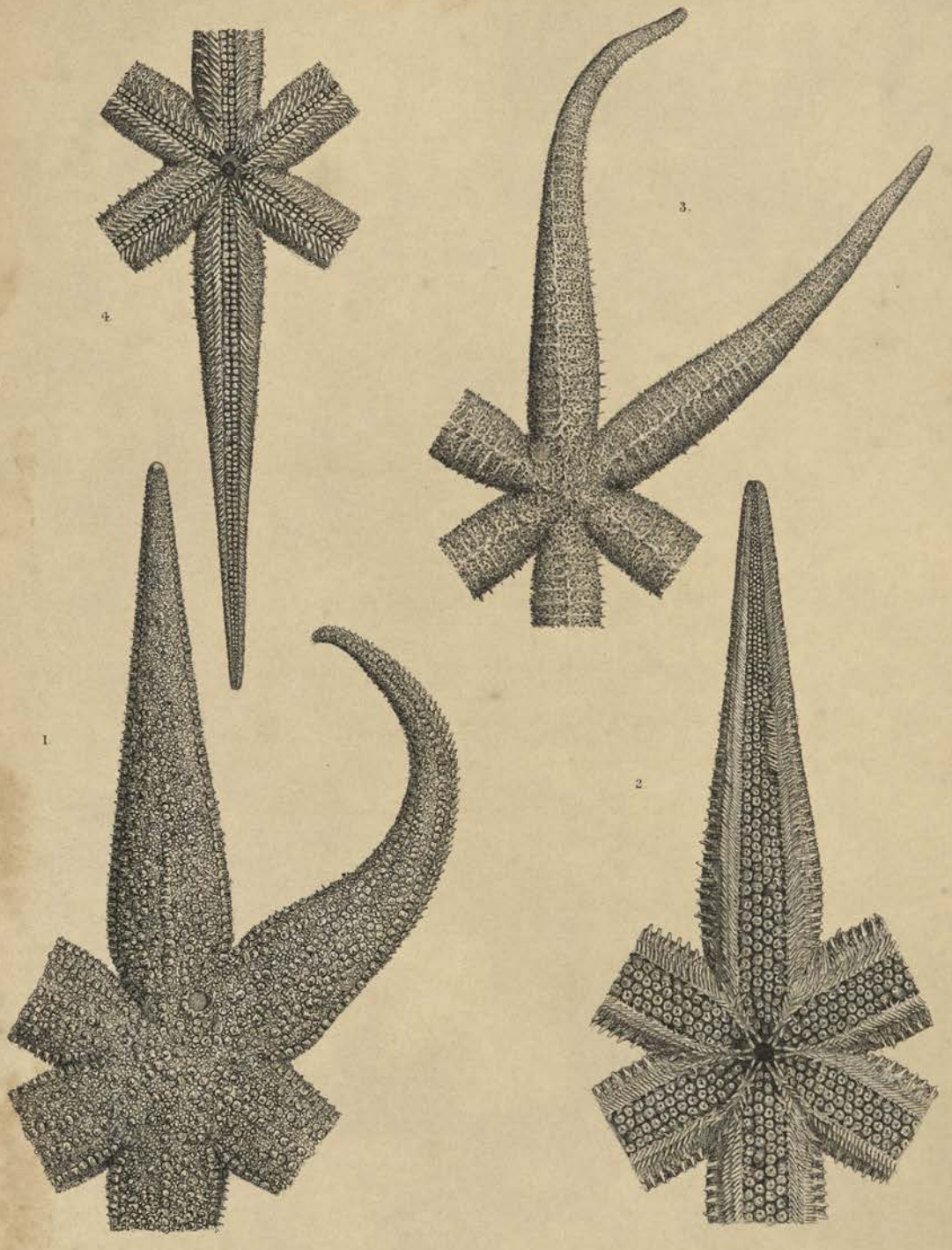
[For magnified details of this species see Pl. CIII. figs. 9, 10.]

Figs. 3, 4. ASTERIAS (HYDRASTERIAS) OPHIDION, n. sp. . . . 581

Fig. 3. Abactinal aspect; magnified 2 diameters.

Fig. 4. Actinal aspect; magnified 2 diameters.

[For magnified details of this species see Pl. CIII. figs. 3, 4.]



F. H. Michael del. et lith.

Mintern Bros. imp.

1–2. ASTERIAS VESICULOSA, n. sp. 3–4. ASTERIAS (HYDRASTERIAS) OPHIDION, n. sp.

PLATE C.

PLATE C.

Page

Figs. 1–3. STICHASTER POLYGRAMMUS, n. sp. . . . 434

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

Fig. 3. Profile view of a ray; magnified 1½ diameters.

[For magnified details of this species see Pl. CIII. figs. 5, 6.]

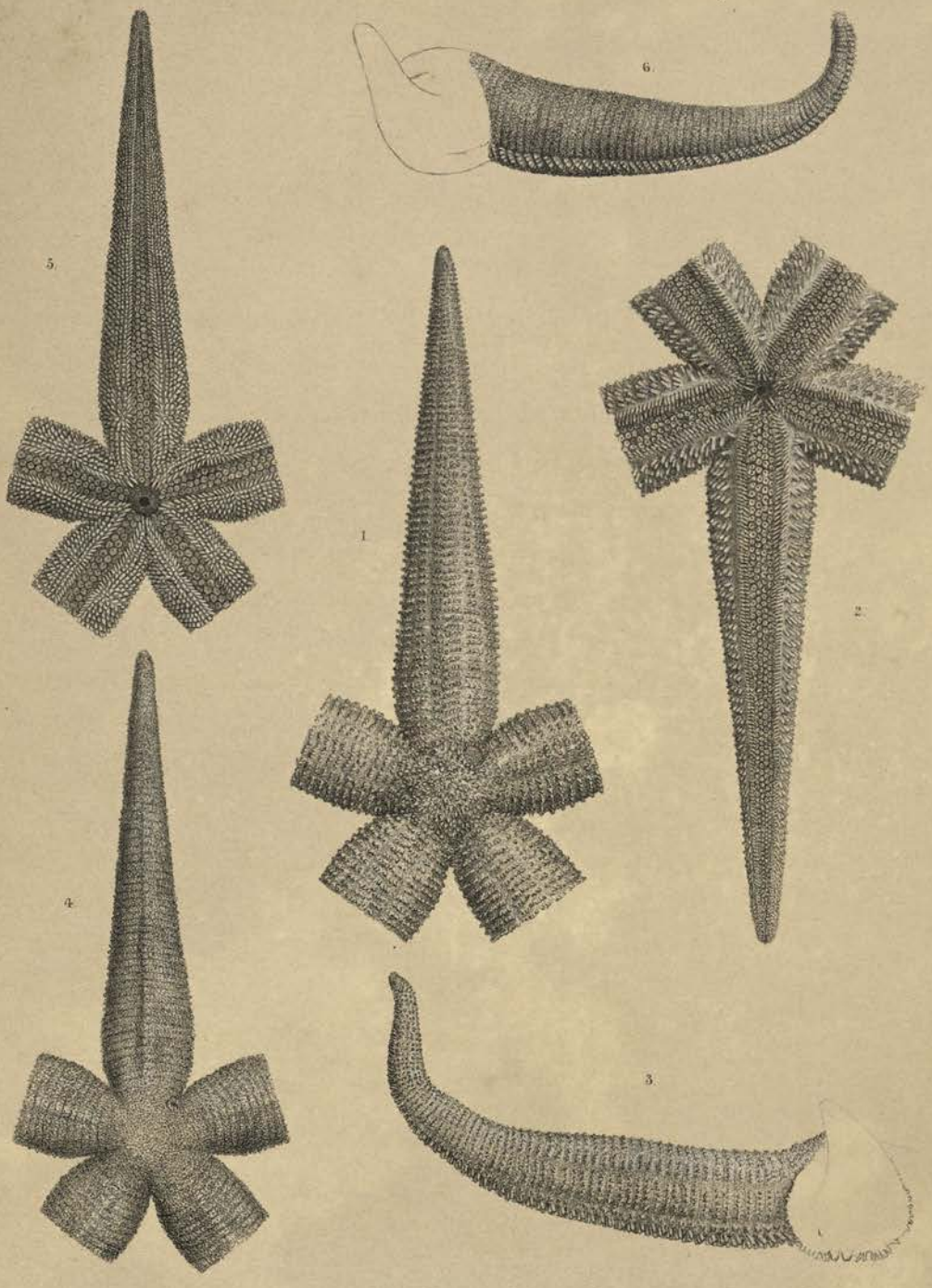
Figs. 4–6. ASTERIAS (SMILASTERIAS) SCALPRIFERA, n. sp. . . 578

Fig. 4. Abactinal aspect; magnified 1½ diameters.

Fig. 5. Actinal aspect; magnified 1½ diameters.

Fig. 6. Profile view of a ray; magnified 1½ diameters.

[For magnified details of this species see Pl. CIII. figs. 1, 2.]



F. H. Michael & W. H. Growther del. et lith.

Mintern. Bros. imp.

1–3. STICHASTER POLYGRAMMUS, n. sp. 4–6. ASTERIAS (SMILASTERIAS) SCALPRIFERA, n. sp.

PLATE CI.

PLATE CI.

Page

Figs. 1, 2. STICHASTER FELIPES, n. sp. 433

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

[For magnified details of this species see Pl. CIII. figs. 7, 8.]

Figs. 3, 4. CALVASTERIAS STOLIDOTA, n. sp. . . . 590

Fig. 3. Abactinal aspect; magnified 1½ diameters.

Fig. 4. Actinal aspect; magnified 1½ diameters.

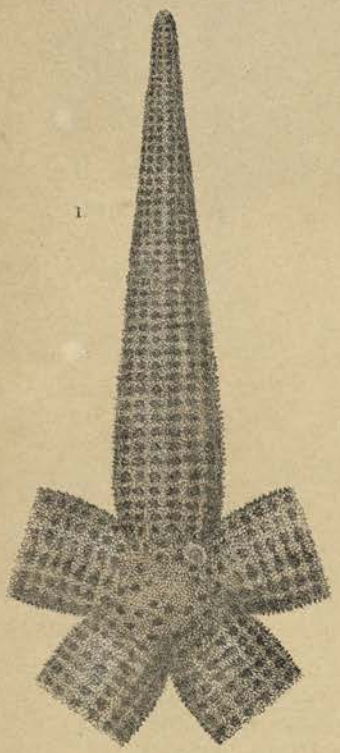
[For magnified details of this species see Pl. CIII. figs. 11, 12.]

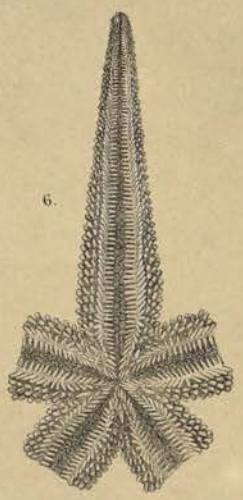
Figs. 5, 6. ASTERIAS (SMILASTERIAS) TRIREMIS, n. sp. . . 579

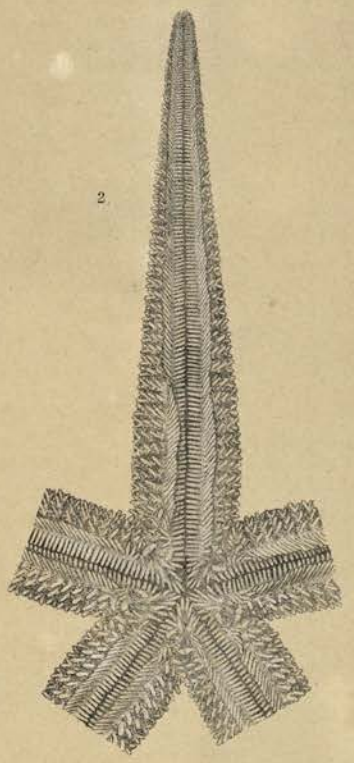
Fig. 5. Abactinal aspect; magnified 2 diameters.

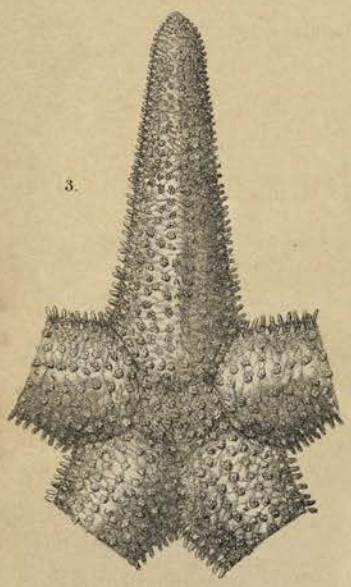
Fig. 6. Actinal aspect; magnified 2 diameters.

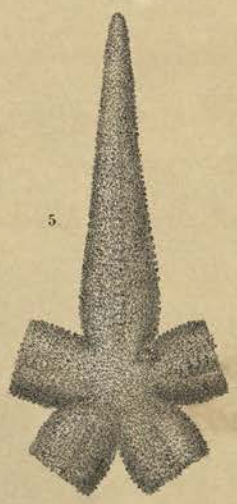
[For magnified details of this species see Pl. CII. figs. 5, 6.]

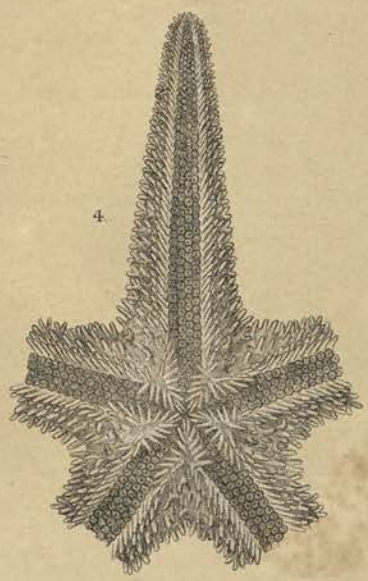












W.H. Crowther del. et lith. Mintern Bros. imp.

1–2. STICHASTER FELIPES, n. sp. 3–4. CALVASTERIAS STOLIDOTA, n. sp.
5–6. ASTERIAS (SMILASTERIAS) TRIREMIS, n. sp.

PLATE CII.

PLATE CII.

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Figs. 1–4. ASTERIAS TORQUATA, n. sp. 570

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 3. A portion of the abactinal surface; magnified 12 diameters.

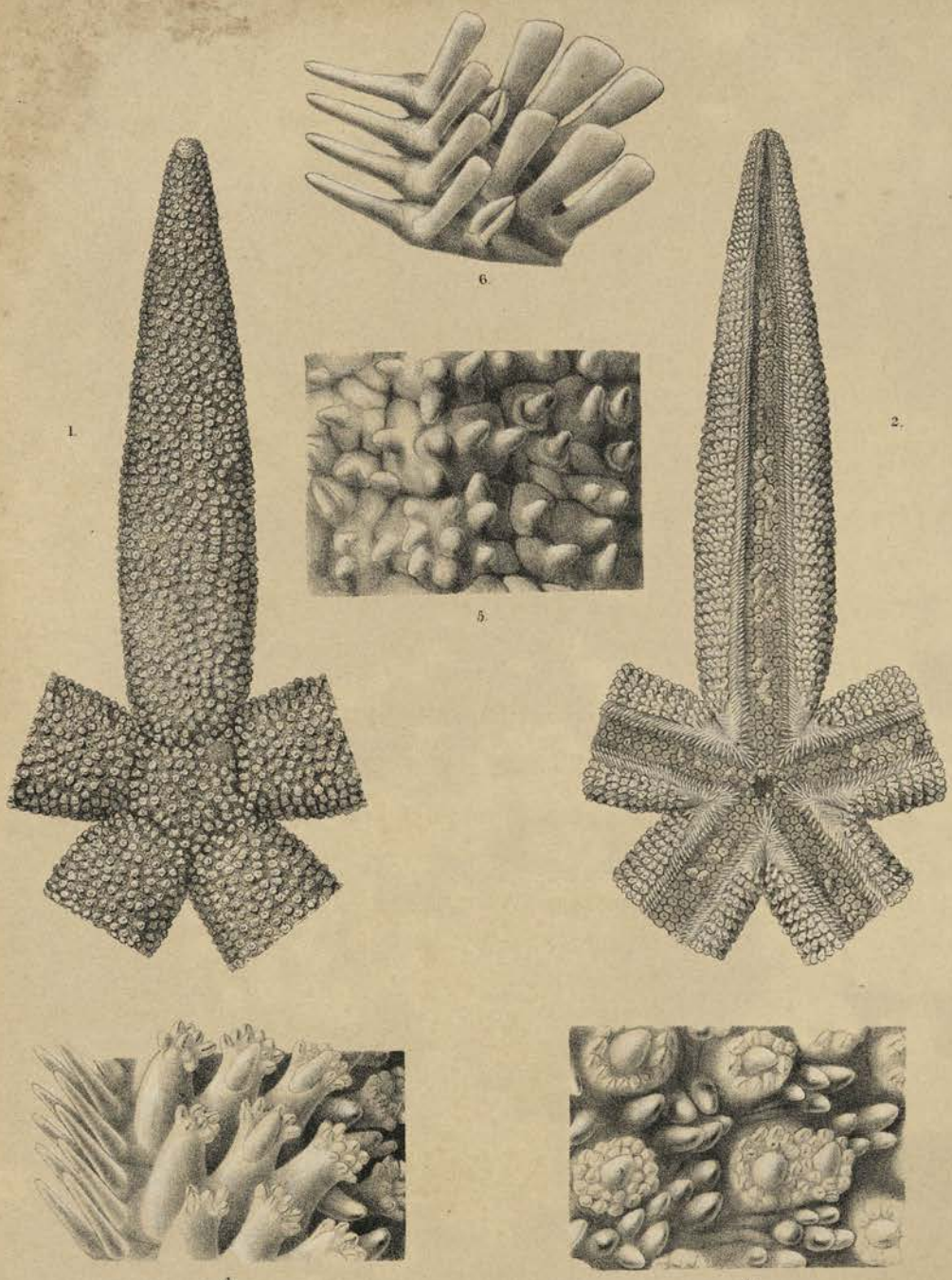
Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

Figs. 5, 6. ASTERIAS (SMILASTERIAS) TRIREMIS, n. sp. . . 579

Fig. 5. A portion of the abactinal surface; magnified 20 diameters.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 20 diameters.

[For macroscopic figures of this species see Pl. CI. figs. 5, 6.]



W. H. Crowther del. et lith.

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1–4. ASTERIAS TORQUATA, n. sp. 5–6. ASTERIAS (SMILASTERIAS) TRIREMIS, n. sp.

PLATE CIII.

PLATE CIII.

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Figs. 1, 2. ASTERIAS (SMILASTERIAS) SCALPRIFERA, n. sp. . . 578

Fig. 1. A portion of the abactinal surface; magnified 15 diameters.

Fig. 2. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.

[For macroscopic figures of this species see Pl. C. figs. 4–6.]

Figs. 3, 4. ASTERIAS (HYDRASTERIAS) OPHIDION, n. sp. 581

Fig. 3. A portion of the abactinal surface; magnified 12 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 14 diameters.

[For macroscopic figures of this species see Pl. XCIX. figs. 3, 4.]

Figs. 5, 6. STICHASTER POLYGRAMMUS, n. sp. . . . 434

Fig. 5. A portion of the abactinal surface; magnified 12 diameters.

Fig. 6. Adambulacral plates and adjacent portion of the actinal surface; magnified 10 diameters.

[For macroscopic figures of this species see Pl. C. figs. 1–3.]

Figs. 7, 8. STICHASTER FELIPES, n. sp. 433

Fig. 7. A portion of the abactinal surface; magnified 10 diameters.

Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified 9 diameters.

[For macroscopic figures of this species see Pl. CI. figs. 1, 2.]

Figs. 9, 10. ASTERIAS VESICULOSA, n. sp. 568

Fig. 9. A portion of the abactinal surface; magnified 13 diameters.

Fig. 10. Adambulacral plates and adjacent portion of the actinal surface; magnified 13 diameters.

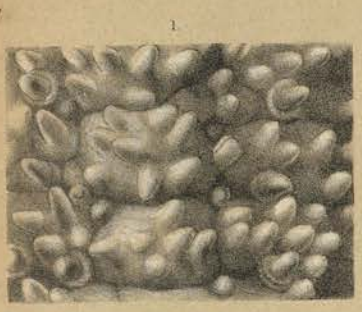
[For macroscopic figures of this species see Pl. XCIX. figs. 1, 2.]

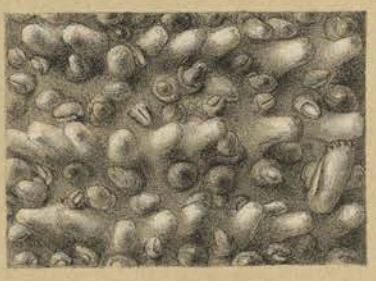
Figs. 11, 12. CALVASTERIAS STOLIDOTA, n. sp. . . . 590

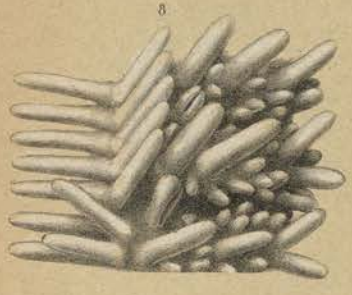
Fig. 11. A portion of the abactinal surface; magnified 14 diameters.

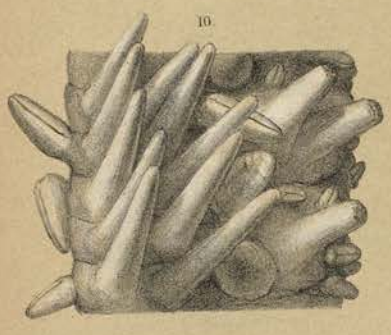
Fig. 12. Adambulacral plates and adjacent portion of the actinal surface; magnified 14 diameters.

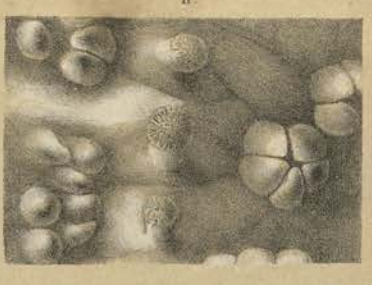
[For macroscopic figures of this species see Pl. CI. figs. 3, 4.]











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1-2. ASTERIAS (SMILASTERIAS) SCALPRIFERA, n. sp.
5-6. STICHASTER POLYGRAMMUS, n. sp.
9-10. ASTERIAS VESICULOSA, n. sp.
3-4. ASTERIAS (HYDRASTERIAS) OPHIDION, n. sp.
7-8. STICHASTER FELIPES, n. sp.
11-12. CALVASTERIAS STOLIDOTA, n. sp.

PLATE CIV.

PLATE CIV.

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Figs. 1-4. ASTERIAS VERSICOLOR, n. sp. . . . 573

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

Fig. 3. A portion of the abactinal surface; magnified 7 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

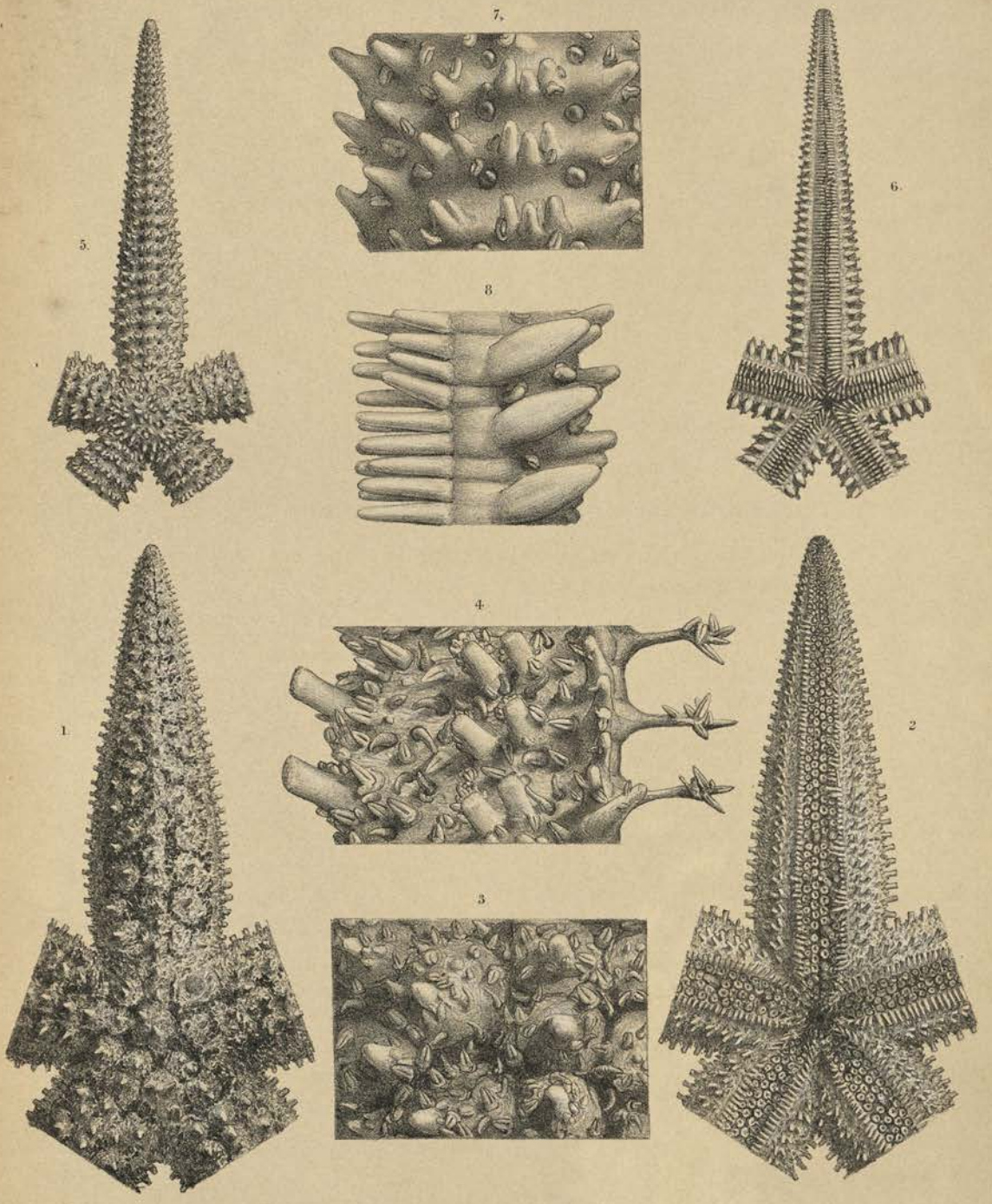
Figs. 5–8. TARSASTER STOICHODES, n. sp. . . . 440

Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

Fig. 7. A portion of the abactinal surface; magnified 10 diameters.

Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified 13 diameters.



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1–4. ASTERIAS VERSICOLOR, n. sp. 5–8, TARSASTER STOICHODES, n. sp.

PLATE CV.

PLATE CV.

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Figs. 1–4. ASTERIAS GLOMERATA, n. sp. . . . 571

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

Fig. 3. A portion of the abactinal surface; magnified 8 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

Figs. 5–7. PEDICELLASTER HYPERNOTIUS, n. sp. . . 558

Fig. 5. Abactinal aspect; magnified 3 diameters.

Fig. 6. A portion of the abactinal surface; magnified 20 diameters.

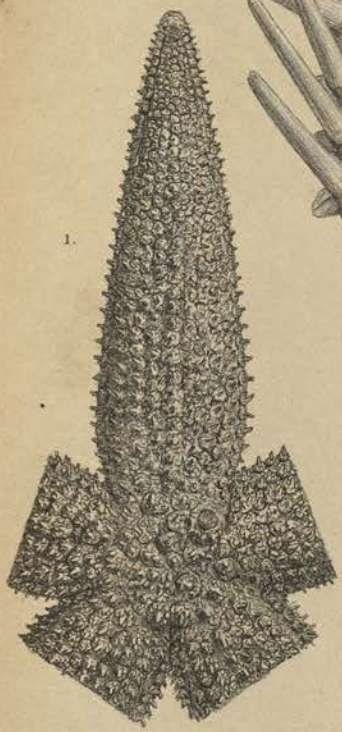
Fig. 7. Adambulacral plates and adjacent portion of the actinal surface; magnified 18 diameters.

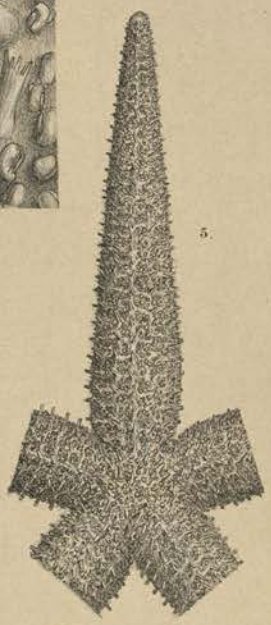
Figs. 8–10. ASTERIAS (COSMASTERIAS) TOMIDATA, n. sp. . . . 576

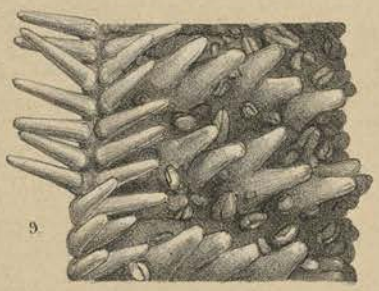
Fig. 8. Abactinal aspect; magnified 1½ diameters.

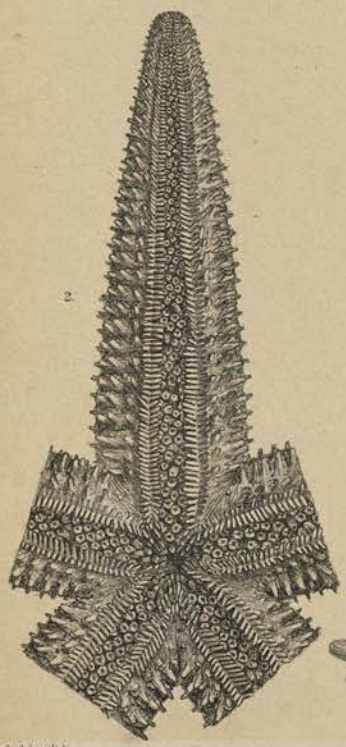
Fig. 9. Adambulacral plates and adjacent portion of the actinal surface; magnified 8 diameters.

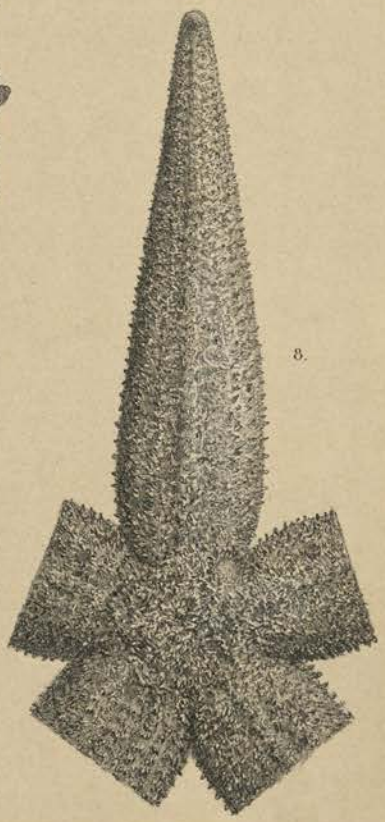
Fig. 10. A portion of the abactinal surface; magnified 8 diameters.











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1-4. ASTERIAS GLOMERATA, n. sp. 5-7. PEDICELLASTER HYPERNOTIUS, n. sp.
8-10. ASTERIAS (COSMASTERIAS) TOMIDATA, n. sp.

PLATE CVI.

PLATE CVI.

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Figs. 1–4. ASTERIAS (STOLASTERIAS) STICHANTHA, n. sp. . . 586

Fig. 1. Abactinal aspect; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

Fig. 3. A portion of the abactinal surface; magnified 4 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 4 diameters.

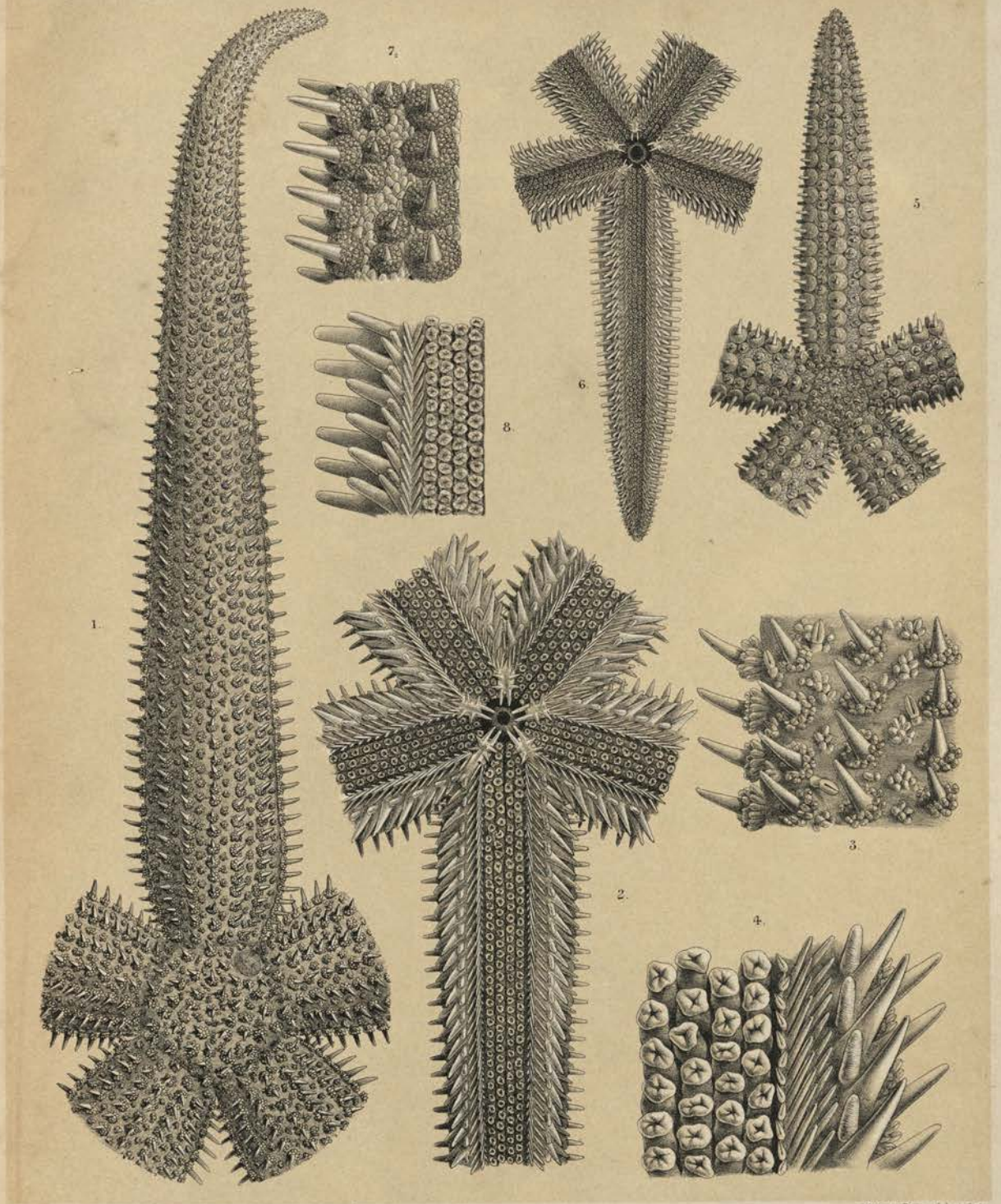
Figs. 5–8. ASTERIAS (STOLASTERIAS) EUSTYLA, n. sp. . . 587

Fig. 5. Abactinal aspect; magnified 1½ diameters.

Fig. 6. Actinal aspect; magnified 1½ diameters.

Fig. 7. A portion of the abactinal surface; magnified 4 diameters.

Fig. 8. Adambulacral plates and adjacent portion of the actinal surface; magnified 4 diameters.



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1–4. ASTERIAS (STOLASTERIAS) STICHANTHA, n. sp.

5–8. ASTERIAS (STOLASTERIAS) EUSTYLA, n. sp.

PLATE CVII.

PLATE CVII.

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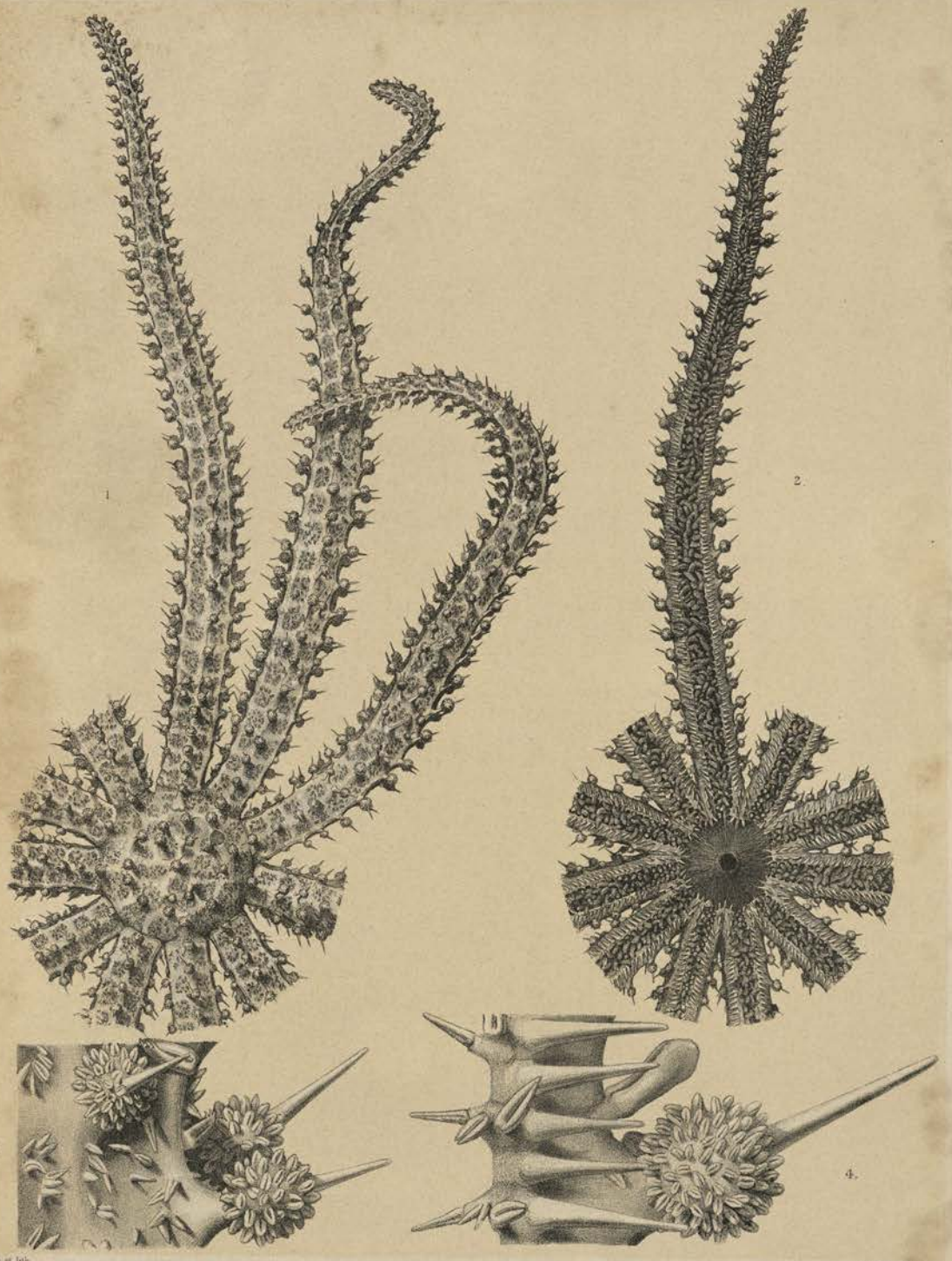
Figs. 1–4. ASTERIAS (STOLASTERIAS) VOLSELLATA, n. sp. . . 584

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 3. A portion of the abactinal surface; magnified 9 diameters.

Fig. 4. Adambulacral plates and adjacent portion of the actinal surface; magnified 15 diameters.



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ASTERIAS (STOLASTERIAS) VOLSELLATA, n. sp.

PLATE CVIII.

PLATE CVIII.

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Fig. 1. LABIDIASTER ANNULATUS, n. sp. 595

Fig. 1. Abactinal aspect; natural size.

Fig. 2. LABIDIASTER RADIOSUS (Lovén), Lütken, . . 595

Fig. 2. Abactinal aspect; natural size.

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1. LABIDIASTER ANNULATUS, n. sp. 2. LABIDIASTER RADIOSUS, (Lovén), Lütken.

PLATE CIX.

PLATE CIX.

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Figs. 1–5. ODINIA PANDINA, n. sp. 598

Fig. 1. Abactinal aspect of a ray ; natural size.

Fig. 2. Abactinal aspect of the disk ; natural size.

Fig. 3. A portion of a ray, lateral view ; magnified 2 diameters.

Fig. 4. Part of the same more highly magnified, to show the papulæ ; magnified 4 diameters.

Fig. 5. Adambulacral plates ; magnified 4 diameters.

Figs. 6–8. BRISINGA CRICOPHORA, n. sp. . . 606

Fig. 6. Abactinal aspect of a ray and the disk ; magnified $1\frac{1}{2}$ diameters.

Fig. 7. Adambulacral plates ; magnified 4 diameters.

Fig. 8. An actinal spine from an adambulacral plate near the base of a ray ; magnified.

Figs. 9–11. BRISINGA VERTICILLATA, n. sp. . . . 604

Fig. 9. Abactinal aspect of a ray and the disk ; magnified $1\frac{1}{2}$ diameters.

Fig. 10. Actinal aspect of the disk ; magnified $1\frac{1}{2}$ diameters.

Fig. 11. Adambulacral plates ; magnified 12 diameters.

Figs. 12–17. FREYELLA POLYCNEMA, n. sp. . . 621

Fig. 12. Abactinal aspect of a ray ; magnified 2 diameters.

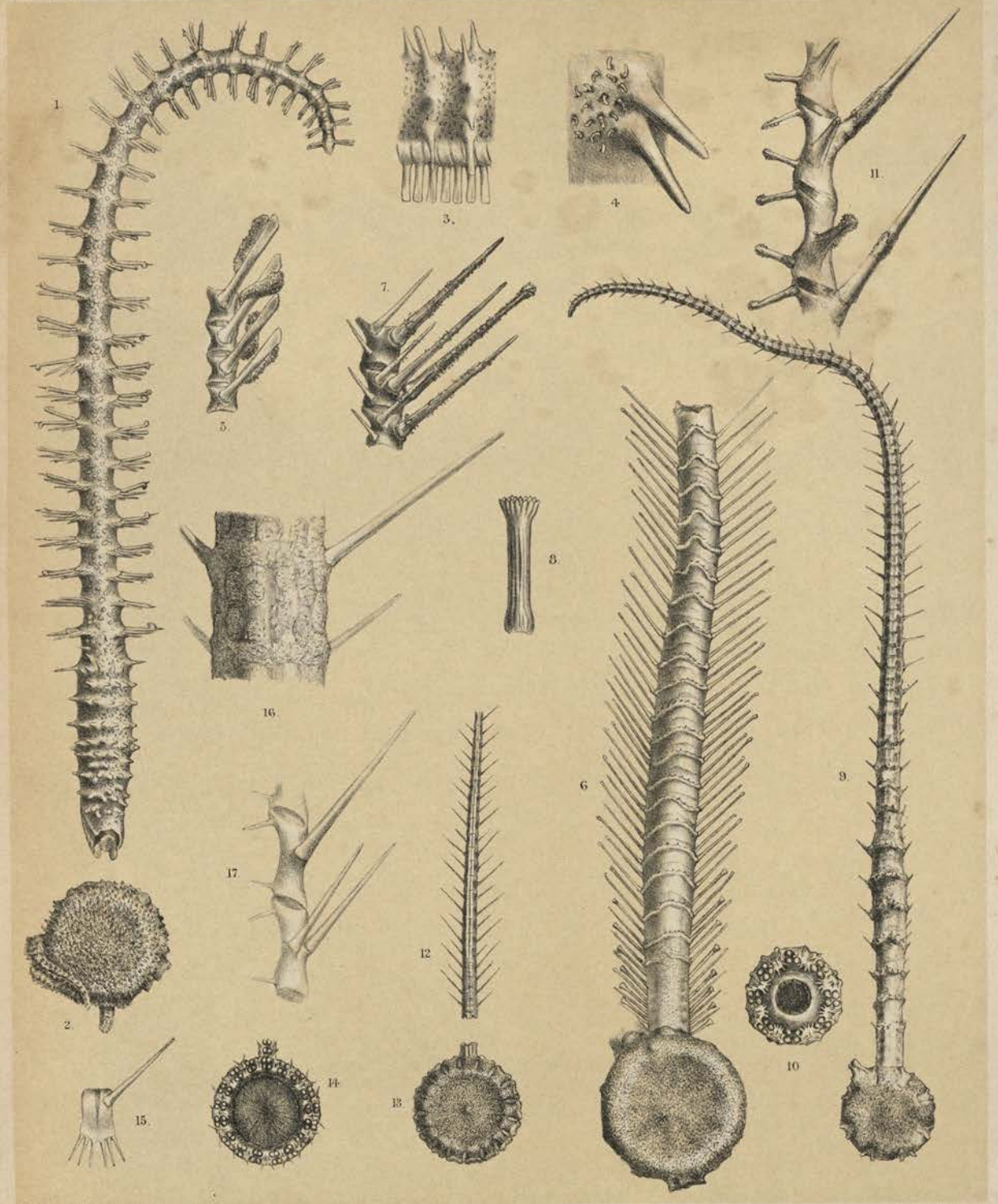
Fig. 13. Abactinal aspect of the disk ; magnified 2 diameters.

Fig. 14. Actinal aspect of the disk ; magnified 2 diameters.

Fig. 15. Mouth-plates ; magnified 6 diameters.

Fig. 16. A portion of the abactinal surface of a ray ; magnified 12 diameters.

Fig. 17. Adambulacral plates ; magnified 12 diameters.



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1–5. ODINIA PANDINA, n. sp.
9–11. BRISINGA VERTICILLATA, n. sp.
6–8. BRISINGA CRICOPHORA, n. sp.
12–17. FREYELLA POLYCNEMA, n. sp.

PLATE CX.

PLATE CX.

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Figs. 1–3. BRISINGA ARMILLATA, n. sp. 608

Fig. 1. Abactinal aspect of a ray and the disk; magnified 1½ diameters.

Fig. 2. Actinal aspect; magnified 1½ diameters.

Fig. 3. Adambulacral plates; magnified 5 diameters.

Figs. 4–7. BRISINGA DISCINCTA, n. sp. 613

Fig. 4. Abactinal aspect of a ray; magnified 1½ diameters.

Fig. 5. Actinal aspect of a portion of a ray; magnified 1½ diameters.

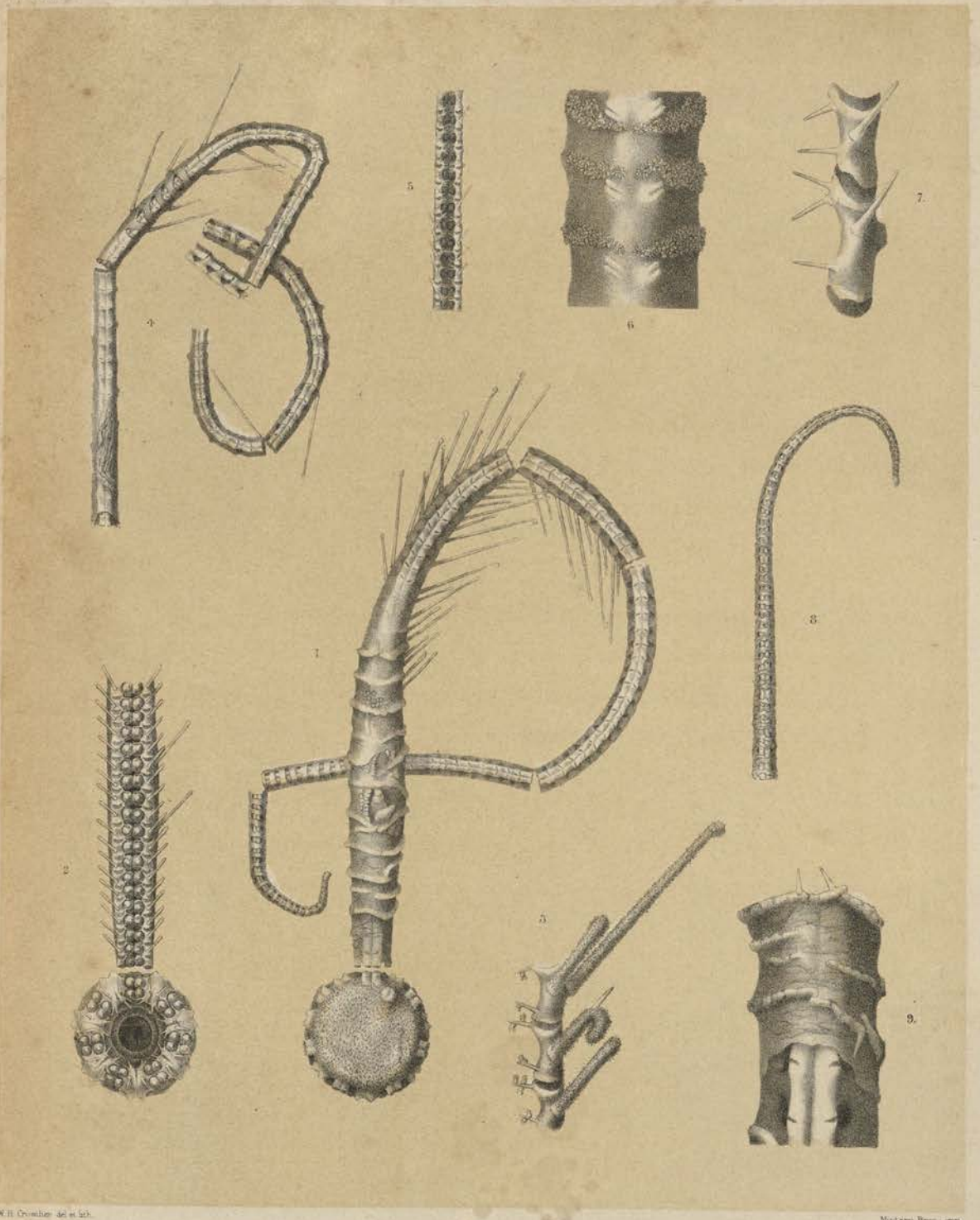
Fig. 6. Abactinal aspect of a portion of a ray; magnified 8 diameters.

Fig. 7. Adambulacral plates; magnified 8 diameters.

Figs. 8, 9. BRISINGA MEMBRANACEA, n. sp. . . . 611

Fig. 8. Abactinal aspect of a portion of a ray; magnified 1½ diameters.

Fig. 9. Abactinal aspect of a portion of a ray; magnified 8 diameters.



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1–3. BRISINGA ARMILLATA, n. sp. 4–7. BRISINGA DISCINCTA, n. sp.
8–9. BRISINGA MEMBRANACEA, n. sp.

PLATE CXI.

PLATE CXI.

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Figs. 1–4. FREYELLA PENNATA, n. sp. 618

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

Fig. 3. A portion of the abactinal surface of an ovarial region; magnified 10 diameters.

Fig. 4. Adambulacral plates; magnified 5 diameters.

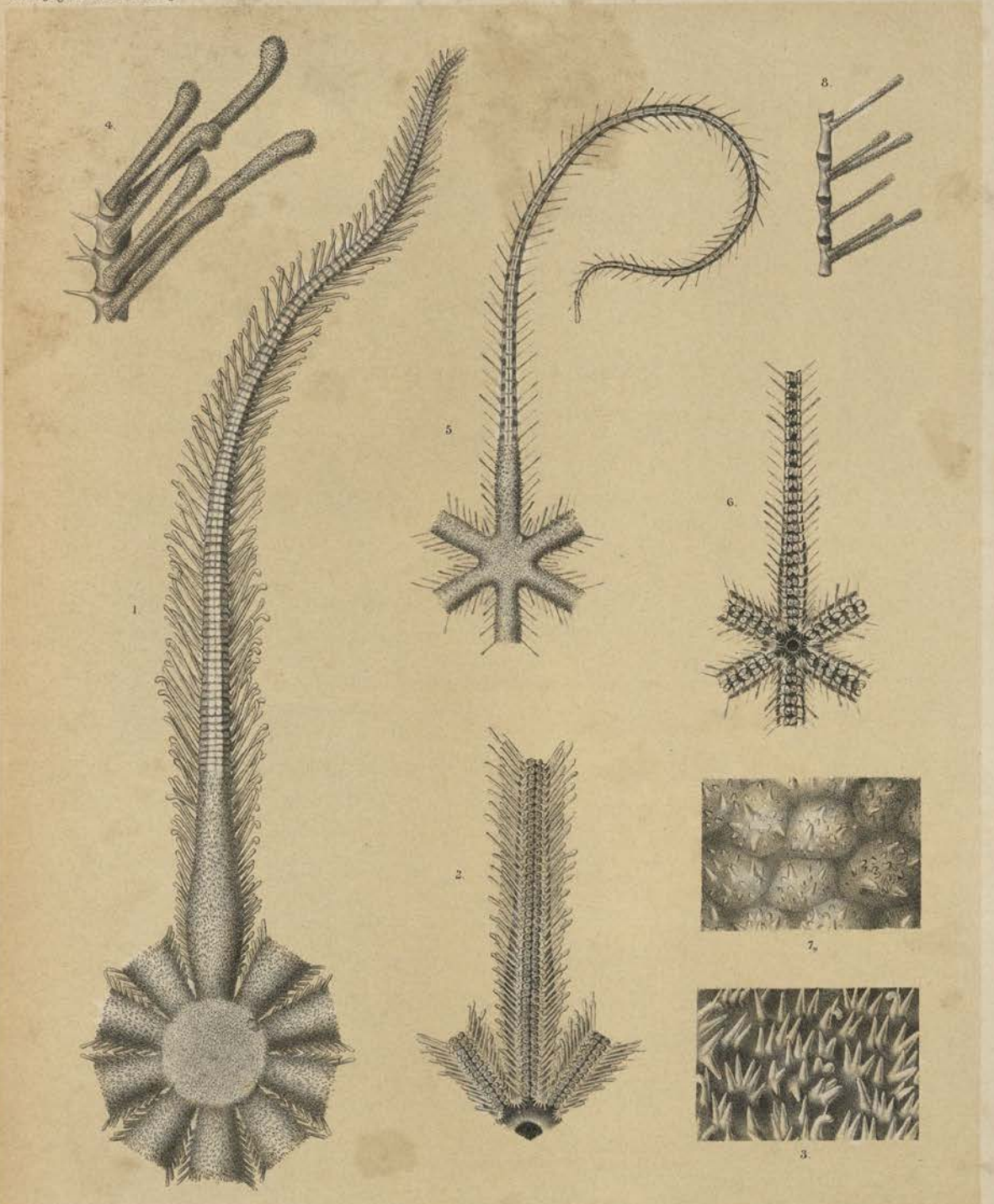
Figs. 5–8. FREYELLA BENTHOPHILA, n. sp. 641

Fig. 5. Abactinal aspect; magnified 2 diameters.

Fig. 6. Actinal aspect; magnified 2 diameters.

Fig. 7. A portion of the abactinal surface of an ovarial region; magnified 20 diameters.

Fig. 8. Adambulacral plates; magnified 6 diameters.



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1–4. FREYELLA PENNATA, n. sp. 5–8. FREYELLA BENTHOPHILA, n. sp.

PLATE CXII.

PLATE CXII.

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Figs. 1–5. FREYELLA ECHINATA, n. sp. 623

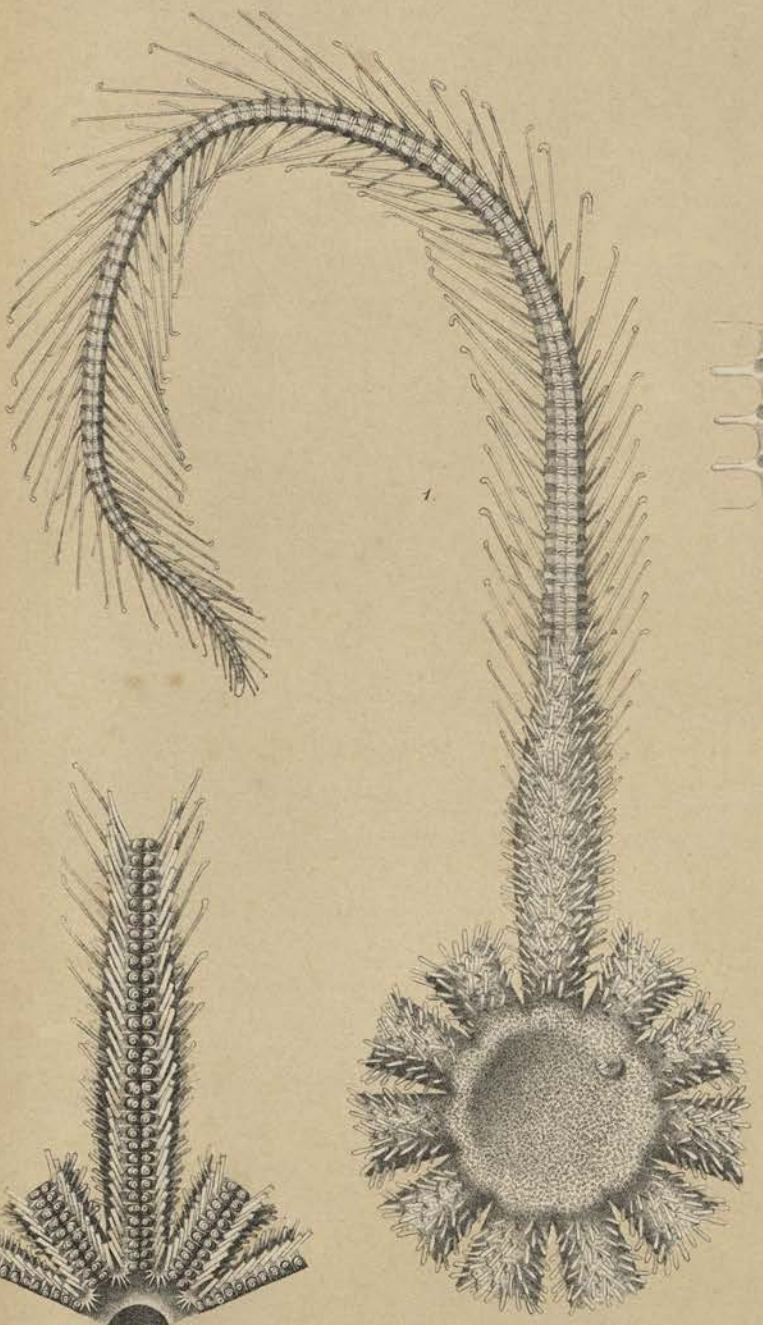
Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

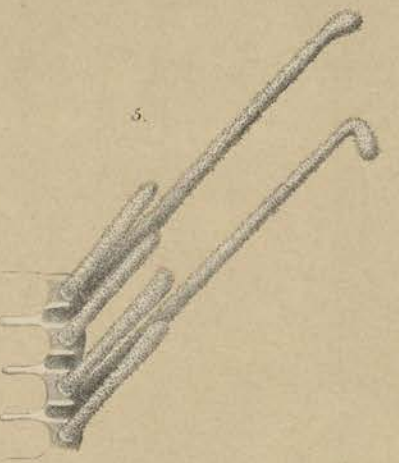
Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 3. A portion of the abactinal surface of the disk; magnified 15 diameters.

Fig. 4. A portion of the abactinal surface of an ovarial region; magnified 5 diameters.

Fig. 5. Adambulacral plates; magnified 4 diameters.





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FREYELLA ECHINATA, n. sp.

PLATE CXIII.

PLATE CXIII.

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Figs. 1–4. FREYELLA FRAGILISSIMA, n. sp. . . . 626

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

Fig. 3. A portion of the abactinal surface of an ovarial region; magnified 10 diameters.

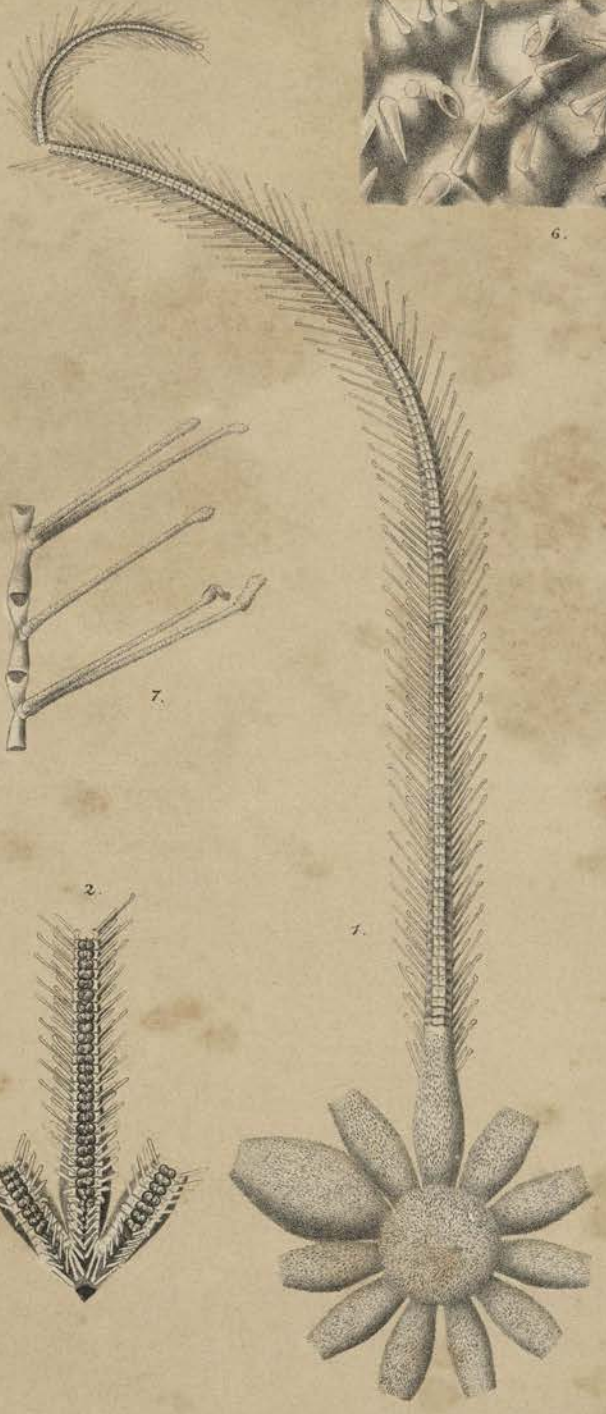
Fig. 4. Adambulacral plates; magnified 5 diameters.

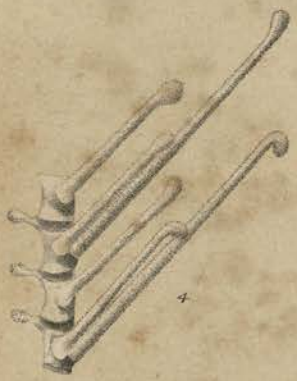
Figs. 5–7. FREYELLA ATTENUATA, n. sp. . . . 645

Fig. 5. Abactinal aspect of a ray; magnified 2 diameters.

Fig. 6. A portion of the abactinal surface of an ovarial region; magnified 16 diameters.

Fig. 7. Adambulacral plates; magnified 4 diameters.





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1-4. FREYELLA FRAGILISSIMA, n. sp. 5-7. FREYELLA ATTENUATA, n. sp.

PLATE CXIV.

PLATE CXIV.

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Figs. 1–4. FREYELLA BRACTEATA, n. sp. 629

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Actinal aspect; natural size.

Fig. 3. A portion of the abactinal surface of an ovarial region; magnified 10 diameters.

Fig. 4. Adambulacral plates; magnified 5 diameters.

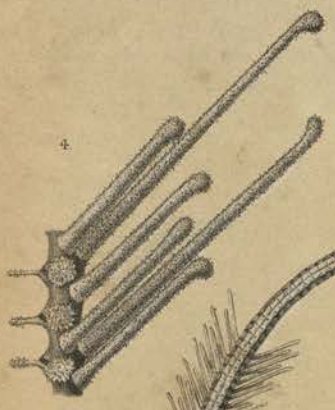
Figs. 5–8. FREYELLA HEROINA, n. sp. 643

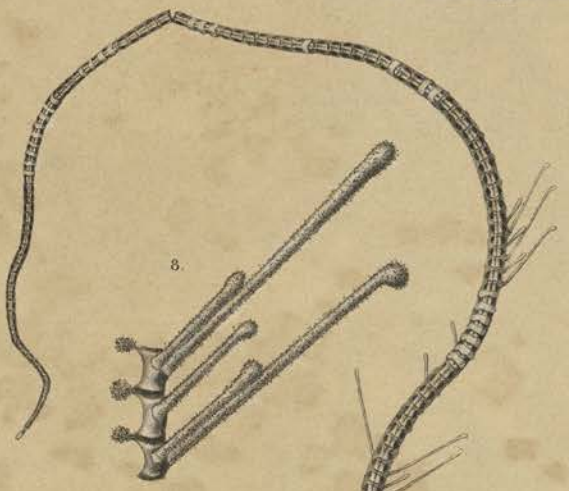
Fig. 5. Abactinal aspect; natural size.

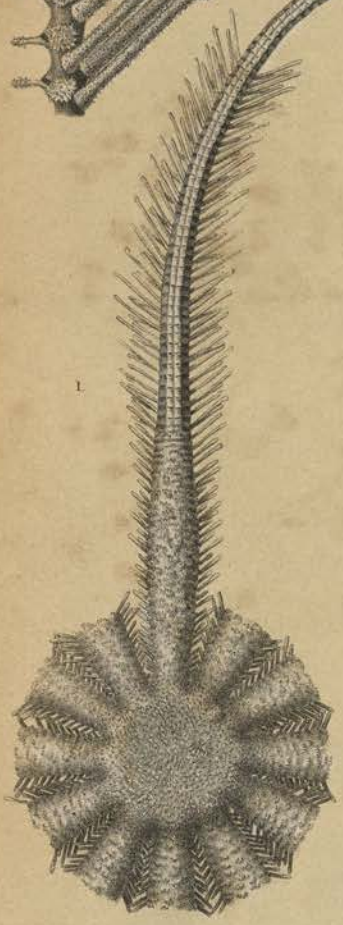
Fig. 6. Actinal aspect; natural size.

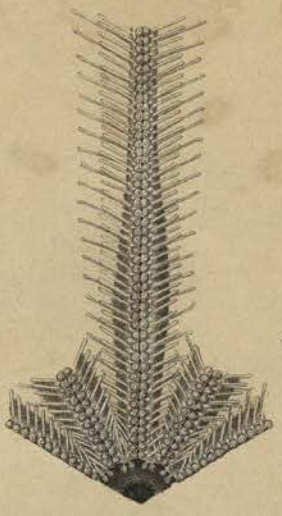
Fig. 7. A portion of the abactinal surface of an ovarial region; magnified 12 diameters.

Fig. 8. Adambulacral plates; magnified 4 diameters.









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1–4 FREYELLA BRACTEATA, n. sp. 5–8. FREYELLA HEROINA, n. sp.

PLATE CXV.

PLATE CXV.

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Figs. 1–5. FREYELLA DIMORPHA, n. sp. 632

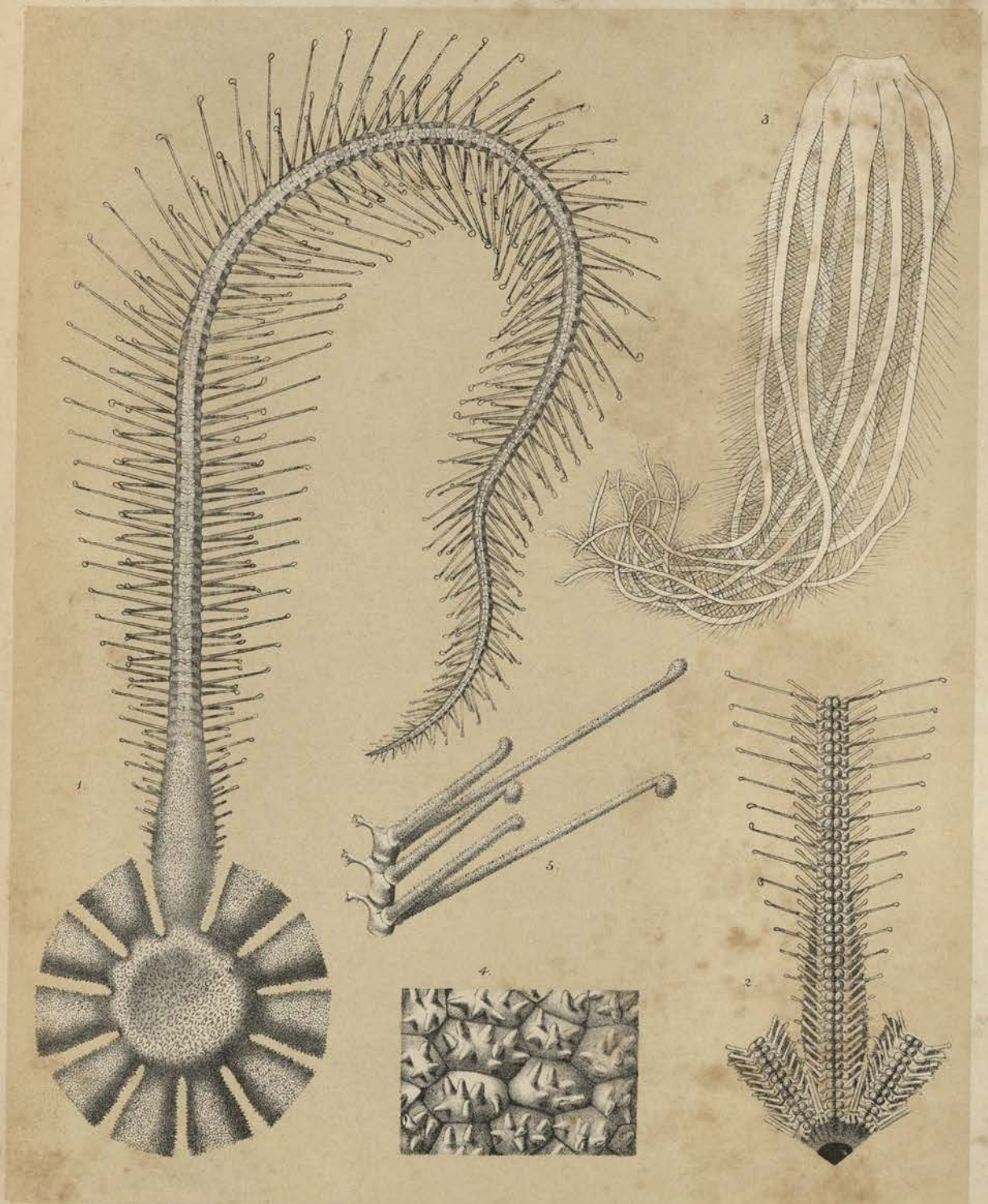
Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 3. Profile view in outline; two-thirds of natural size.

Fig. 4. A portion of the abactinal surface of an ovarial region; magnified 10 diameters.

Fig. 5. Adambulacral plates; magnified 3 diameters.



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FREYELLA DIMORPHA, n. sp.

PLATE CXVI.

PLATE CXVI.

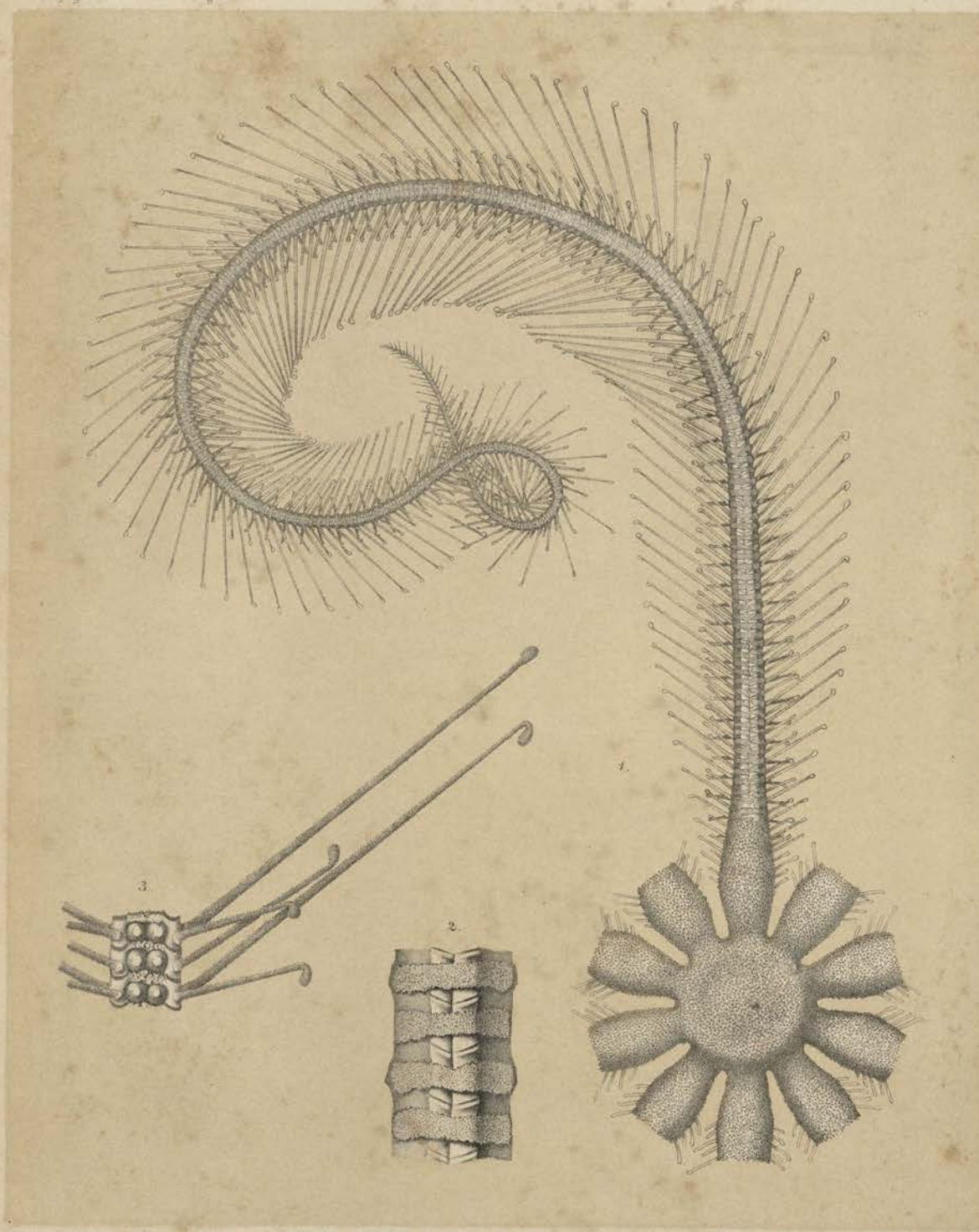
Page

Figs. 1–3. FREYELLA REMEX, n. sp. 635

Fig. 1. Abactinal aspect; natural size.

Fig. 2. Abactinal aspect of a portion of a ray; magnified 3 diameters.

Fig. 3. Actinal aspect of a portion of a ray; magnified 5 diameters.



W.H.Crowther del. Hollick lith. Hanhart imp.

FREYELLA REMEX, n.sp.

PLATE CXVII.

PLATE CXVII.

Page

Figs. 1–3. FREYELLA TUBERCULATA, n. sp. . . . 638

Fig. 1. Abactinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 2. Actinal aspect; magnified $1\frac{1}{2}$ diameters.

Fig. 3. A portion of the abactinal surface of an ovarial region; magnified 12 diameters.

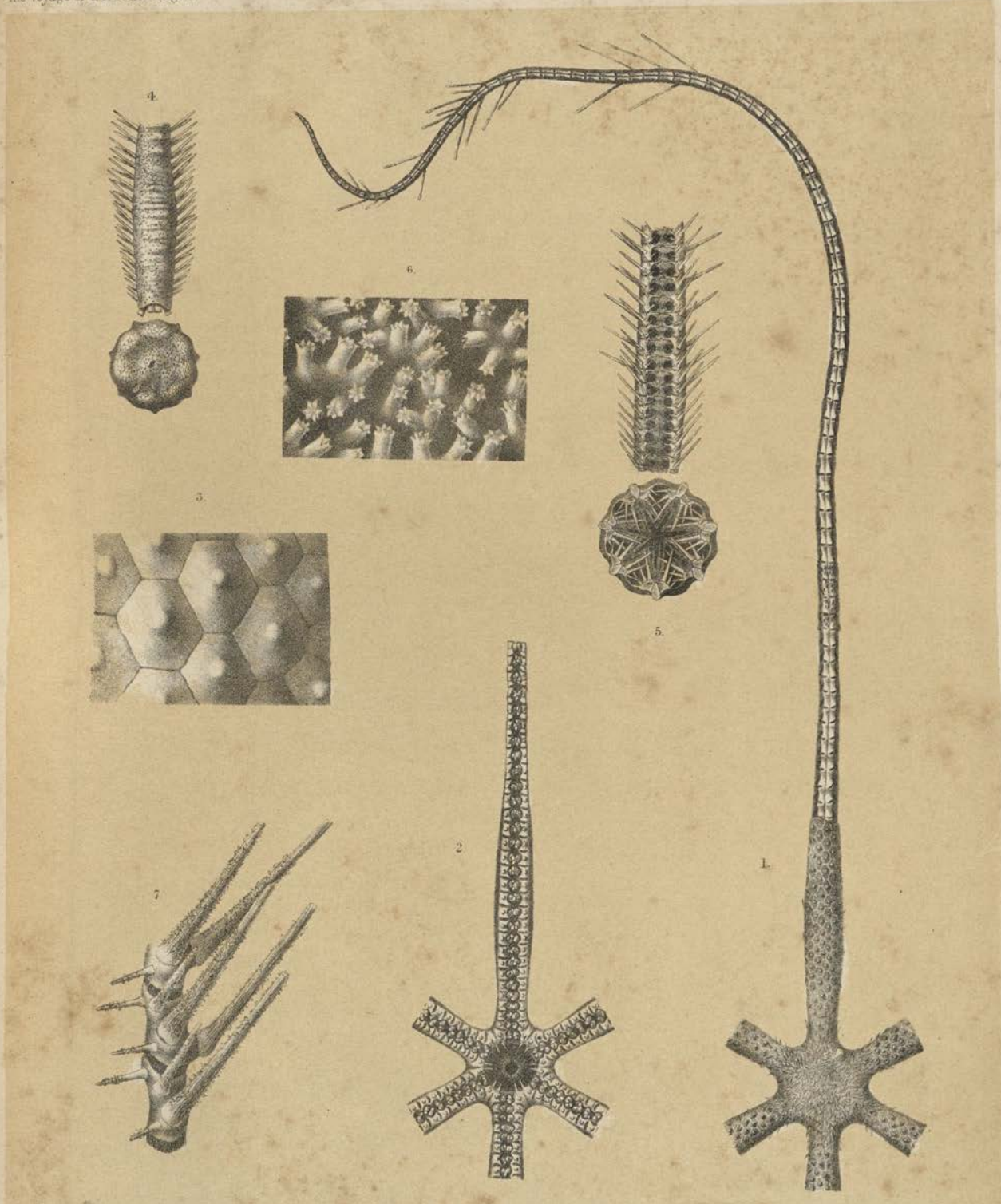
Figs. 4–7. COLPASTER SCUTIGERULA, n. sp. . . . 648

Fig. 4. Abactinal aspect of a portion of a ray and the disk; magnified $1\frac{1}{2}$ diameters.

Fig. 5. Actinal aspect of a portion of a ray and the disk; magnified 2 diameters.

Fig. 6. A portion of the abactinal surface of the disk; magnified 20 diameters.

Fig. 7. Adambulacral plates; magnified 10 diameters.

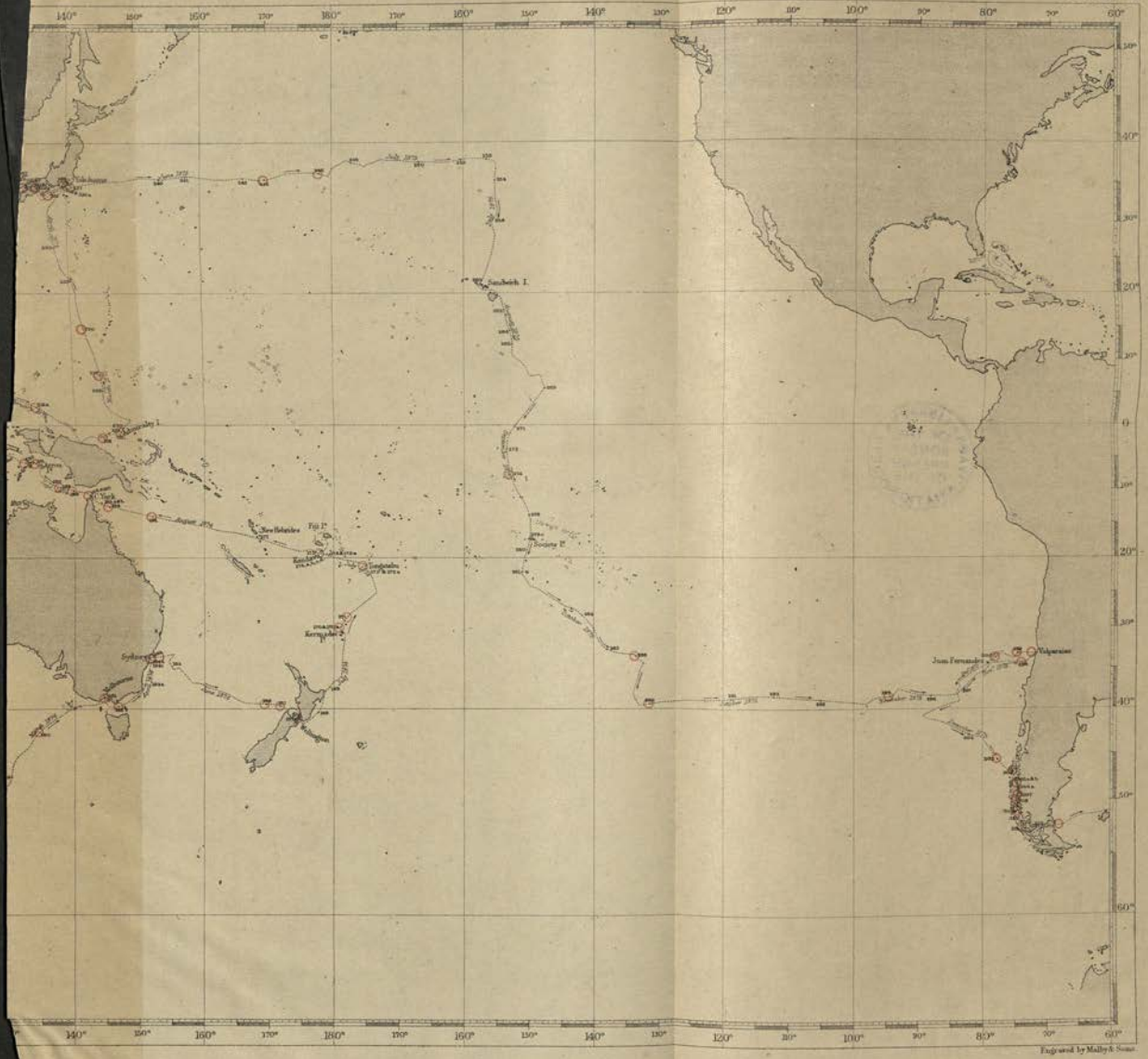


W.H. Crowther del. et lith.

Mintern Bros. imp.

1–3. FREYELLA TUBERCULATA, n. sp. 4–7. COLPASTER SCUTIGERULA, n. sp.

TRACK OF
H.M.S. CHALLENGER
The localities at which Asteroidea were collected are marked with a red circle



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